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dissertation entitled

OLDER PERSONS' SUCCESSFUL AGING:
RELATIONSHIPS AMONG PROXIMITY OF CLOTHING TO
SELF, AGE IDENTITY, AND SELF-ACTUALIZATION

presented by

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has been accepted towards fulfillment
of the requirements for the

Doctor of Philosophy	degree in	Human Environment: Design and Management

Major Professor's Signature

7 – 18 – 2005

Date

OLDER PERSONS' SUCCESSFUL AGING: RELATIONSHIPS AMONG PROXIMITY OF CLOTHING TO SELF, AGE IDENTITY, AND SELF-ACTUALIZATION

By

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A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Human Environment and Design

2005

ABSTRACT

OLDER PERSONS' SUCCESSFUL AGING: RELATIONSHIP AMONG PROXIMITY OF CLOTHING TO SELF, AGE IDENTITY, AND SELF-ACTUALIZATION

By

Young-A Lee

This research tested a conceptual model for proximity of clothing to self (PCS) in relation to age identity, self-actualization, psychological well-being, self-assessed health, sex, and chronological age among elderly individuals, aged 65 and over, within the human ecological perspective and needs theory. The objectives were to (1) confirm the factor structure of the Proximity of Clothing to Self (PCS) Scale and demonstrate its construct validity and reliability for elderly individuals; (2) develop and test a conceptual model that proposes how elderly individuals may age successfully; and (3) explore correlations between PCS and self-actualization, between PCS and age identity, and between age identity and self-actualization.

One hundred ninety five elderly respondents returned two completed questionnaires, which were (1) Clothing: A Resource for Successful Aging? and (2) Personal Orientation Inventory (POI) from the first mailing. From the second mailing, 55 elderly individuals completed the clothing questionnaire. Data from 250 respondents and 195 respondents were used in analysis for objective 1 and objectives 2 and 3, respectively. The data were collected by the use of various measurements: Sontag and Lee's PCS Scale, Shostrom's Personal Orientation Inventory, Barak's Cognitive Age Scale, and Life Satisfaction Index (LSIZ) by Wood, Wylie, and Sheafor.

The findings were:

1. Three rounds of confirmatory factor analysis (CFA) using the structural equation

modeling (SEM) approach were completed and resulted in a 3-factor, 19-item PCS Scale with demonstrated construct validity and reliability for elderly individuals for research objective 1. These confirmed PCS subscales were named as *clothing in relation to* (1) *self as structure – process*, (2) *self-esteem – evaluative and affective processes*, and (3) *body image and body cathexis*.

2. For research objective 2, using SEM, hypothesis one, that chronological age and sex had a positive direct effect on PCS, was supported. Hypothesis two, that the elderly person increased his or her level of age identity with increasing chronological age, was supported. Three hypothesized effects of self-assessed health on age identity, self-actualization, and psychological well-being were supported. The significant impact of PCS on self-actualization was found for hypothesis 4; however, the path was negative rather than positive. Hypothesis 5, that self-actualization had negative, direct effect on age identity, was not supported. Hypothesized effects of age identity and self-actualization on psychological well-being were supported. In sum, the results indicated that elderly individuals' psychological well-being, one component of successful aging, was directly affected by their self-assessed health, age identity, and self-actualization. PCS indirectly influenced individuals' psychological well-being in a slightly negative way in later life.
3. Correlation analyses and descriptive analyses for the respondents revealed that elderly individuals in the age category of 75 to 84 years were different from those in the age category of 65 to 74 years and 85 years and over.

Limitations of this study were presented and implications and recommendations for future studies and for practice were also suggested.

DEDICATION

To my dad, Shin-Woong Lee

I learned from you, I grew my dream from you, I admire you,

and I love you.

To my mom, Jung-Ran Park

for her unconditional love, support, and encouragement.

To my advisor, M. Suzanne Sontag

who fully supports and encourages my continuous education.

ACKNOWLEDGMENTS

Many individuals contributed to the accomplishment of my goal. Without their support, this dissertation might never have been completed.

I would like to extend my sincere and heartful appreciation to Dr. M. Suzanne Sontag, my dissertation advisor and chairperson of my doctoral guidance committee, for her total support, intellectual inspiration and stimulation, sharp critique and helpful advice, generosity, and patience. Sincere appreciation is extended to:

Dr. Sally, Helvenston, committee member, teaching assistantship supervisor during my doctoral program years, and chairperson of the Department of Human Environment and Design, for her valuable suggestions to strengthen this dissertation and her tremendous support to complete this dissertation and of my professional development.

Dr. Mark Reckase, committee member, for his assistance with developing the structural equation model and with the statistical analyses to test the model.

Dr. Schiamberg, committee member, for his interest in this dissertation topic and for his experience and assistance with the conceptualization of older persons' aging process.

Dr. Ann C. Slocum, program guidance committee member and research assistantship director during my first two years of the doctoral program before she retired, for her facilitation of my involvement in various research projects and of my professional development.

Mrs. Phyllis Chaphalkar, for her time and valuable input to edit this dissertation.

I acknowledge the support from the Michigan Agricultural Experiment Station

and the Department of Human Environment and Design, for their financial support during the course of my graduate study and research.

I want to recognize and thank the College of Human Ecology and the Graduate School of Michigan State University, for the honor of being the recipient of a dissertation fellowship to partially cover the dissertation expenses.

I also acknowledge the support from Kappa Omicron Nu Honor Society, for the honor of being the recipient of a Beatrice Paolucci Research Grant.

I wish to express my appreciation to the elderly individuals who participated in this study.

Finally, I extend warm and heartful thanks to all my family members who have been patient and supportive, especially to my mom, Jung-Ran Park, my youngest brother, Jae-Hyun Lee, and my younger sister, Hyun-Jung Lee.

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CHAPTER I

INTRODUCTION

The U.S. population is "graying." Simply, people are living longer. Life expectancy in 1900 was 47 years; in 2000, it was closer to 77 years (Vierck, & Hodges, 2003). Reduction in infant mortality and death rates in childhood and declination in death rates among middle-aged and older individuals are major reasons for improvement increased life expectancy. Vierck and Hodges said that death rates have declined within the aged population. These advances are related to two key factors: one, people are taking better care of themselves, and two, science and medicine are taking better care of people (Rowe, & Kahn, 1998). For example, dramatic technological advances in the management of heart disease have reduced the death rate, and people are engaging in various appropriate exercises and nutrition to maintain health.

Over two thirds of people now live to at least age 65, a threefold increase from 1900. And the fastest growing segment of the population is in the 85 and over age category – 4 percent in 1900 to over 10 percent in 2000 (Vierck, & Hodges, 2003). The elderly in the United States constitute approximately 12.4 percent of the total population (5.1% male and 7.3% female). In 2000, 35.0 million people 65 years of age and over were counted in the United States. This represents a 12.0 percent increase since 1990, when 31.2 million older people were counted.[1] By the year 2020, the elderly population is predicted to represent 14.5 percent of the total United States population (Bureau of the Census, 2000a).

[1] In the census definition, the elder population is defined as people 65 years and over.

Moreover, the first wave of the 76 million baby boomers born between 1946 and 1964 will approach traditional retirement age, which is aged 65 and over, in 2010 (Binstock, 1999). Partly as a result of various advances, the old-old – those over age seventy-five – represent the fastest-growing segment of the population. By 2010, approximately 46.6 percent of the aged will be 75 years or over; and by 2050, more than 55 percent of the aged are projected to be 75 or older (Kart & Kinney, 2001). By 2050, the number of centenarians (those over age 100) in the United States may be as high as 4.2 million (Bureau of the Census, 1999).

The elderly population of the United States increased throughout the twentieth century, and continued substantial growth is projected through the first half of the twenty-first century. Therefore, it is not surprising that problems and needs of older people are receiving increased research attention.

Historically, attitudes about aging have been fraught with mythical thinking, a shortsightedness we have yet to overcome. For example, older people are viewed as sick, cognitively inept, isolated, a financial drain on society, and depressed by their circumstances (Rowe & Kahn, 1998). However, these myths are not true. In the future, a greater number of the older population will be physically, cognitively, psychologically, and socially healthy than in past years. Still, substantial numbers of elderly population will be disabled, socially isolated, and depressed. People consistently become depressed in the wake of stressful life events largely because those events disrupt their ability to go about life as usual (Hansen-Gandy & Pestle, 1993). Rowe and Kahn argued that older people can still age successfully by avoiding disease, engaging with life, and maintaining high cognitive and physical function even though older people face various stressful

events. How can they age successfully? Older people need to identify manageable activities and available resources to age successfully not only to meet their specific needs but also to fit their functional capacities.

Clothing can be one need satisfier which allows older people to engage with life more actively. Clothing is a pervasive resource in everyday life for persons of all ages, and it may often be overlooked as a significant influence on psychological and social well-being. Clothing is a part of the material culture (Linton, 1936) and is an easily obtainable consumer product that can be used as a tool in the adjustment to life changes. Pedersen (1989) recognized clothing as a need satisfier having biophysical, social, and psychological value for all people.

The aging process creates physical, social, and psychological changes for elderly individuals that affect their clothing (Bader, 1983). As the elderly age, many physical changes occur, their socially interactive environment may be changed because of retirement, and they may experience a loss of their status because of reduction in income or the death of a spouse or friends. Due to various experiences of aging many elderly may suffer a loss of self-confidence and be deprived of self-actualization. Clothing can compensate and make the physiological changes less traumatic. This can allow the elderly to continue feeling good about themselves. In addition, clothing may be of more importance for older persons to keep social interaction with others more actively; and this in turn allows them to project a positive self-image. Concurrent with life changes is a need for personal adjustment. Successful transition through the life cycle entails adjustment to change.

Individuals subjectively assess conditions of their lives and environments in

which they live and have feelings of satisfaction or dissatisfaction that affect their subjective evaluations of the totality of life (Sontag, 1978). As the nearest environment, clothing is considered to be and evidence suggests it is an indicator of the quality of life (Eicher, 1981; Sontag, 1978). Clothing may contribute to a sense of well-being or quality of life more than any other designed objects surrounding individuals because the individuals see themselves wearing their clothing, express themselves through clothing, use clothing to meet a variety of needs, and relate to others in social interaction in part through the use of clothing as nonverbal communication.

The extent of influence of clothing on perceived quality of life varies among individuals. In Sontag's (1978) study, the more a person felt psychologically close to clothing, the more his or her quality of life tended to be affected by his or her feelings about clothing. This suggests that if individuals feel or think that clothing is not relevant to how they perceive themselves, their perceived quality of life may not be greatly influenced by satisfaction or dissatisfaction with qualitative or quantitative conditions of their clothing (Slocum, 1981), and the converse is also true.

Age identity, that is perceived age, has been seen as a way of helping to explain the individual's psychological age or functional age in various areas of research. Baum and Boxley (1983) argued that people are as old as they feel. Their argument challenges the belief that chronological age and cognitive age or age identity are homogeneous for all elderly. Older people do not necessarily have the same chronological and psychological age. Feeling younger than their age provides them with the incentive to act and look younger (Baum & Boxley). Clothing can help them accomplish this goal. Perceiving themselves as younger than their chronological age may improve perceived

well-being (life satisfaction) and self-esteem (Linn & Hunter, 1979).

Objectives of the Study

The overall purpose of this study is to contribute to theory development in the importance of clothing to the self from analysis of data and integration of two theoretical perspectives, specifically Maslow's needs satisfaction theory and human ecology theory. Secondarily, continuing to refine measures of major concepts and identifying directional relations among these important concepts will contribute to the generation of knowledge that may increase the elderly's ability to age successfully.

The more specific objectives of this study are:

1. To confirm the factor structure of the Proximity of Clothing to Self (PCS) Scale and demonstrate its construct validity and reliability for older persons, ages 65 and over.
2. To develop and test a theoretical model that proposes how elderly individuals may age successfully by fulfilling the need for self-actualization by incorporating a primary resource environment, i.e., clothing, into their self-system.
3. To explore correlations between PCS dimensions and subscales of a measure of self-actualization, between PCS dimensions and age identity, and between age identity and subscales of a measure of self-actualization.

Statement of Problem

The aging process creates change in the lives of elderly individuals. Elderly persons experience physiological, social, and psychological transitions that place new demands upon them. There are many physiological changes that accompany the aging

process such as loss of skin elasticity, porous bone structure, wasting muscles, and so on. Adapting to changes in roles and subsequently self-esteem, loss of control in residency and reduction of social opportunities all can bring some isolation. In addition, retirement and limited social contacts due to death and disability of close family members or friends may cause some social isolation as well as psychological isolation. Because of these various major changes in their later lives, clothing may be seldom considered as an important part in their lives. However, clothing indeed goes far beyond protection, modesty, and decoration; it differentiates and identifies, communicates a great deal, and expresses self-image and personality. In addition, it buttresses self-esteem, projects regard for others, influences behavior, and proclaims status, taste, and aesthetic sensitivity. Further it can contribute to a sense of well-being and self-acceptance.

Since this elderly segment of the population is increasing proportionately at a greater rate than the remaining segments of the population, society has viewed this group differently and given attention to living healthy lifestyles. Elderly individuals' lives are no longer restricted by their chronological age; rather than that their perceived or subjective age (age identity) is more important for their daily lives or activities. The concept, *successful aging*, is an emerging concept in this society that considers various dimensions (i.e., functional, affective, cognitive, and productive involvement status) to maintain elderly individuals' healthy lives. Much attention has been given to healthy nutritious food, regular exercise, and leisure or social activities for elderly people to age successfully. These are all environmental resources available for them and are various need satisfiers for elderly individuals to meet their desire for successful aging. Clothing is also one human environmental resource and can be used to meet various levels of needs

and goals for elderly individuals; however, still little is known about the meaning of clothing to themselves and the way to use clothing to meet elderly individuals' various levels of needs. This research pays attention to this unexplored area so it can demonstrate the way that clothing can be a facilitator of their various daily activities to age successfully, especially with regard to role which the psychological aspects of successful aging plays in self-system.

The above drives this researcher to test the theoretical model and explore correlations among various variables. This research can be beneficial in a practical way for elderly individuals to age successfully. The results of this study may suggest the development of methods to improve older person's psychological well-being through the medium of clothing and through improving the level of self-actualization. The findings can be utilized as a guide for improving elderly person's mental or psychological health.

Another research objective is to refine a standardized, valid, and reliable measurement instrument of human ecological concepts in the social science of clothing. Basic research involving definition and clarification of meaning, scale construction, and measurement of significant concepts is vital to the advancement of theory development and testing within the human ecological paradigm. These efforts have been advanced by Sontag and Lee (2004) to test reliability and construct validity for the Proximity of Clothing to Self (PCS) Scale for an adolescent group. The originally proposed six dimensional PCS Scale was not confirmed for this group; therefore, further investigation was required to test a valid, reliable, easily administered measurement instrument for the concept, proximity of clothing to self, for the elderly and confirm the usability of the PCS Scale across another age range.

In the area of the social science of clothing, limited effort has been given to develop valid and reliable measurements. Although instruments are being developed in this area of study, few have been recognized, adopted, and used in other scholarly fields of study. One aim for this research is to continue refining the PCS Scale that the former researchers have initiated and extend and introduce this useful concept to other fields. Examining directional relationships and correlations among various variables for elderly population is one way to introduce this concept in various fields such as gerontology, social psychology, human development, social work, and so on.

Theoretical Framework

Human Ecology Theory

The human ecological perspective of the individual person in interaction with his or her environment guided the design of this study. Bubolz and Sontag (1993) have conceptualized the environment as the total surroundings of human beings and the context for their behavior, growth, and development. As a consequence of the interaction process of the person with the environment, the individual experiences personal outcomes (such as rejection, acceptance, increases or decreases in self-esteem) that are reflected in his or her affective evaluations of the self and various domains of life (Sontag, Peteu, & Lee, 1997). Such evaluations also affect a person's perceived quality of life or sense of well-being. The personal outcomes experienced by the individual will affect the individual's behavioral response or outputs to the environment. These outputs have consequences for the person and the environment which, in turn, affect future environmental resource inputs that are perceived and experienced by individuals. This human ecological framework emphasizes that the quality of one's life is a function of

need fulfillment by resources of the individual and within the individual's environment.

In human ecology theory, it is critical that human beings and their multiple environments are not isolated from each other but are viewed as interdependent and interrelated. A human's behavior is not only affected and constrained by the environment but also changes, develops and modifies the environment for survival, satisfaction of needs and attainment of goals.

Deficiencies in the meaningful objects in a person's near environment may bring about a low perceived quality of life. Quality of life is a matter of the satisfactory fulfillment, objectively and subjectively, of a person's physical, psychological, and social needs within the environment (Bubolz & Sontag, 1993). Available resources are necessary to meet these needs for a satisfactory quality of life. Elderly person's perception of his or her age, self-actualization, clothing, and health is a highly important personal resource for his/her satisfactory quality of life.

For older people, aging is not a singular event, but rather a complex process. Changes and losses to a person's social world and to physical functioning occur across the life span. These changes may become pervasive and more keenly felt in later life. In old age increased demands for adaptation to changes occur at the same time as decline in exogenous resources (i.e., loss of family, friends, social networks, social roles and activities) and endogenous resources (physical functioning, health, cognitive functioning). Together the context and nature of these changes may limit the capacity of older people to alter the conditions they confront. Undiminished in old age is the need to exercise the human ability to make meaning of life for the self. To adapt to these changes successfully and to gain satisfaction with life, several important ecological concepts

throughout an older person's life span are recognized.

Older persons interact with other human beings as well as their non-human environment. Elderly individuals interact with three distinct interrelated environments – natural physical-biological (NE), human built (HBE), and social-cultural environments (SCE) to maintain their system successfully (Bubolz & Sontag). For instance, clothing is one of the closest human-built environments that elderly individuals take with them wherever they go. Clothing is made by using various resources available in the natural physical-biological environment and it is used to protect elderly individuals' body from cool weather or dangerous natural environments. Clothing is also one of many resources that they use to express themselves and to communicate with others in social-cultural environments.

Adaptation is "behavior of living systems (older person) that changes the state or structure of the system, the environment, or both. In order to adapt, systems must be able to detect information, select from a range of possible alternative responses, and effect a response. Adaptive behavior is successful to the extent that it increases the likelihood of achieving system goals" (Bubolz & Sontag, 1993, p. 434).

The nature of the interaction of the older person with various environments and the way the older person adapts to various changes will affect the older person's ability to age successfully. Meeting various needs through use of available resources will aid successful aging.

Needs are requirements that must be met at some level if individuals are to survive and engage in adaptive behavior. Resource means "matter-energy and information converted into specific forms for attaining goals; ways by which individuals

meet needs and adapt to changing environments and stressors. Examples of personal resources include skills, health, knowledge, and intelligence.... Nonhuman resources include housing, clothing, gasoline, money, and the like. The environment provides resources, such as social supports and services, as well as nonhuman resources" (Bubolz & Sontag, 1993, p. 434).

Perception involves people's selective attention to environmental stimuli and their interpretation and assignment of personal meaning. Perception is a significant factor in the consequences of older person's experience of various events. How they perceive their biological, social, and psychological changes through the aging process will influence their well-being or quality of life.

Quality of life of humans is defined in terms of the extent to which basic needs are met and values realized. It is synonymous with well-being, from both objective and subjective standpoints, and can be assessed on individual, family, and societal levels. At the individual level, feelings of happiness or misery, peace of mind or anxiety, and satisfaction or dissatisfaction are subjective indicators of quality of life. For this study, life satisfaction is used to measure older person's perceptual well-being.

Self-system and environments. Sontag, Peteu, and Lee (1997) argue that "the individual self-system, a subsystem of the total person, is formed and modified through dynamic interaction of the person within this complex environment through time (p. 4)." They conceptualize the individual self-system as comprising:

> (a) the person's *perception and experience of his or her biological and psychosocial characteristics* – with this as a basis, the individual engages in (b) the process of *incorporation of the environment with the self* and forms (c) a cognitive and affective *response of the self to the environment.* As consequences of this interactive process, (d) *personal outcomes* are also part of the individual self system (p. 4).

Biologically, the person can be characterized by physical attributes such as sex and age. Psychologically, the person has developed through time a particular self-concept and level of self-esteem. Both biological and psychological characteristics are influenced by one's perception and experience within various environmental contexts. For example, as one experiences one's biological sex and is socialized in one's family and social world, the person develops a perception of gender, that is of one's masculinity or femininity. Through interaction with various environments, the individual develops an interest in and incorporates selected environments with the self, developing a psychological linkage to environments that have special meaning for the individual (Andrews & Withey, 1976; Sontag & Schlater, 1982). As a result of this incorporation of selected environments with the self, individuals have cognitive and affective responses to these environments. This interactive process influences personal outcomes of the individuals previously mentioned (p. 7). Such evaluations also affect a person's perceived quality of life or sense of well-being (see Figure 1).

As Figure 1 shows, "the personal outcomes experienced by the individual will affect the individual's behavioral response or *outputs* to the environment. These outputs have consequences for the environment – i.e., *environmental outcomes* – which, in turn, affect future *environmental resource inputs* that are perceived and experienced by the individual self-system (Sontag, Peteu, & Lee, 1997, p. 5)." As elderly individual experiences his or her sex, chronological age, health and is socialized in one's various involvements in society, he or she develops a perception of gender, age identity, and self-assessed or perceived health, respectively. He or she may perceive him or herself healthier than his or her actual objective health based on how present society views

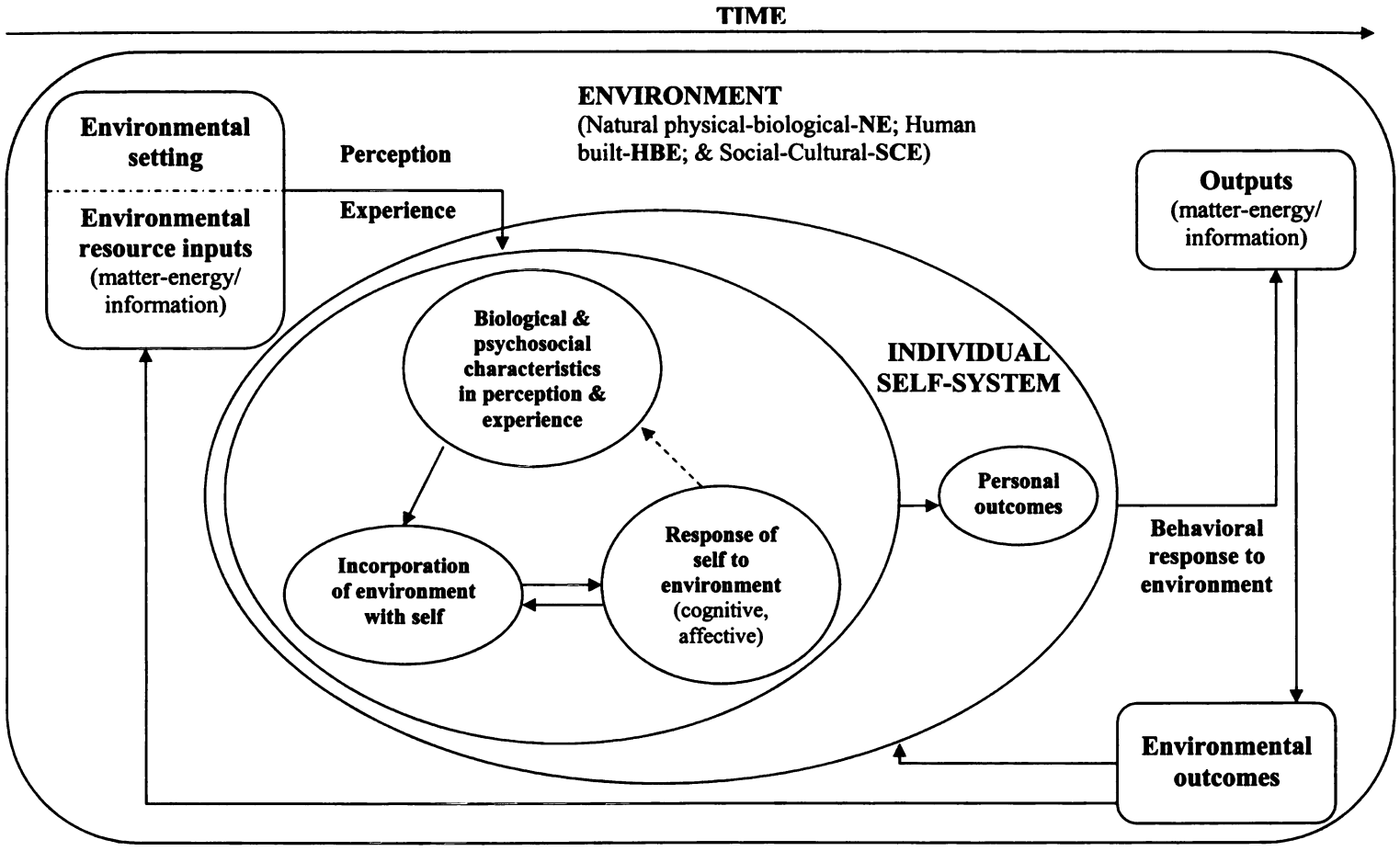


Figure 1. The ecological self: Dynamics of individual – environment interaction within a human ecosystem (Sontag, Peteu, & Lee, 1997, p. 5). (This figure was reprinted with a minor modification with permissions of the authors).

elderly people. The perception among these variables interrelates with each other. These biological and psychological characteristics in perception and experience influence the elderly individual to develop an interest in and incorporate selected environments (i.e., clothing) with the self, here PCS, and provide special meaning to clothing. This incorporation of clothing with the self (PCS) may improve or fulfill his or her various level of needs such as physiological, safety, belonging, self-esteem, or self-actualization. In this study, self-actualization is considered as a cognitive and affective response to the environment, including clothing. Self-actualization may, in turn influence the elderly individual's age identity or self-assessed health. If persons are more self-actualized or self-fulfilled, they may feel younger than their chronological age and then stay much healthier in their later life. This interactive process influences the level of psychological well-being of the individual in the self-system. This personal outcome will affect the individual's various daily activities and behaviors in various environments. If a person feels healthy and younger than his or her age, and is satisfied with his or her life, he or she may have a tendency to have more social involvements. These may bring access to future environmental resources such as friendships that will contribute to his or her successful later life. Therefore, the ecological self framework is worthwhile for this research to develop theoretical linkages of important variables with the psychological closeness of clothing to the self.

Successful aging. An individual's level of life quality is a correlate of successful aging (Chou & Chi, 2002; Palmore, 1981). Perceived quality of life is a person's perception about his/her life, and it is one indicator of successful aging. Moreover, successful aging is a bon-adaptive behavior process. Aging successfully is a subjective

and behavioral concept in that it involves images about old age, appropriate social roles, and values about what constitutes "the good life" (Day, 1991). Pfeiffer (1977) conceptualized successful aging in terms of how well older adults adapt (physically, psychologically, and socially) to the challenges associated with aging, especially those associated with loss. Baltes and Baltes (1990) conceptualized successful aging in terms of attaining and maximizing desired outcomes (i.e., gains) and minimizing undesired outcomes (i.e., losses).

The word "successful" in successful aging includes more than a positive outcome. It implies achievement rather than mere good luck. Successful aging is dependent on an individual's choice and effort. The way to distinguish successful and unsuccessful aging is not only based on a difference between sickness and health. Freedom from disease and disability is an important component of successful aging but there are still missing parts. Rowe and Kahn (1998) define successful aging as the ability to maintain the following three key conditions: (1) low risk of disease and disease-related disability; (2) high mental and physical function; and (3) active engagement with life. It is the combination of all three that represent the concept of successful aging more fully.

The concept, adaptation, is important to older person's successful aging. Adaptation is a necessary process for the growth and progressive integration of living systems, especially for older people. Therefore, in this study I consider successful aging as a bon-adaptive behavioral process (in contrast to unsuccessful aging which would be mal-adaptive) to improve individual's psychological well-being (life satisfaction). Older persons who have high life satisfaction through using various resources to meet their needs have the opportunity to age successfully.

Need Satisfaction Theory

Various kinds of human needs should be met to improve an older person's life quality.

Needs are requirements that must be met at some level if individuals are to survive and engage in adaptive behavior. Maslow's (1970) concept of a hierarchy of needs is valuable in understanding the successful aging process. According to his theory of motivation, human behavior is motivated by needs at various levels. The most basic needs are for physiological satisfactions (i.e., food, rest, warmth) and safety (i.e., security, freedom from fear). The need for belonging emerges only when and if these basic needs are fulfilled. Self-esteem needs include the desire for competence and prestige but, when these needs have been met, a new restlessness may appear that propels the individual toward self-actualization, a higher level of need that produces more profound feelings of satisfaction. The human needs for survival and safety are met by adequate, suitable housing and clothing, nutritious food, medical care, and protection from physical harm. Clothing can also meet needs for belonging and acceptance by others. Only when the aged are able to focus on a full range of higher needs, goal attainments, and abilities will they be able to acknowledge, appreciate, and use their attributes in order to become creative, competent, purposeful, fulfilled individuals. More specific explanation of the way that clothing meets various levels of human needs are given under the heading of integration of theories in the next section.

In Maslow's theory of self-actualization, Maslow (1970) has developed the idea of the self-actualizing person – a person who is more fully functioning and lives a more enriched life than does the average person. Self-actualization is defined as "ongoing

actualization of potentials, capacities and talents, as fulfillment of mission (or call, fate, destiny, or vocation), as a fuller knowledge of, and acceptance of, the person's own intrinsic nature, as an unceasing trend toward unity, integration or synergy within the person" (Maslow, 1962, p. 23). Through self-actualization, a person will reach more positive psychological well-being.

Integration of the Theories

According to human ecology theory, clothing is the nearest environment of human beings and may be incorporated psychologically as a part of the self. According to James' (1890) definition of self, he aptly portrayed the dual nature of the self by differentiating between "I" (the self as subject) and the "me" (the self as object). Under the "me," he includes three different categories which are: (1) material Me (i.e., body, clothes, and other possessions); (2) social Me (i.e., many social roles); and (3) spiritual Me.

Clothing as a resource may be used as a coping strategy or needs satisfier by older persons as well as others across the life span, particularly in terms of its enhancement of feelings of self-esteem, achieving acceptance by others, and expressing the self. Individuals selectively use external objects within their environment for reflecting the self. But all external objects are not equally meaningful to individuals (Bubolz & Sontag, 1993).

Clothing can satisfy many types of needs. Clothing may be as important during later years as earlier years. New social relationships, self-image, and physical changes can be enhanced with appropriate clothing. Clothing can meet survival and safety (physiological) needs first as Maslow discussed in his argument. Clothing can be a need

satisfier as it protects from dangerous environments. Love and belonging needs may be met by dressing in a similar way to one's peer group and in a manner appropriate to the occasion. In addition, clothing as a gift object from one's family members may also fulfill person's belonging needs within the family. Clothing that helps individuals feel better about themselves will help meet self-esteem needs. For example, if clothing fits well on one's body and the person becomes more confident about himself or herself, the person may fulfill his/her self-esteem needs. Clothing also can be used as a need satisfier to fulfill self-actualization needs by reflecting one's identity and expressing one's self. Clothing that meets important biophysical needs and other needs is considered as the most proximal environment of older persons.

Interactions between human beings and their environments stimulate psychological involvement with the environments through the process of imposing meaning on them (Sontag & Bubolz, 1996). Through continuous transactions between an individual and the physical objects of his or her nearest environment in everyday life, some objects become central to the individual. When an individual thinks that some object reflects, is congruent with, or enhances a salient aspect of self, the individual may perceive it as important and meaningful in his or her life, and extend the self to it through emotional investment. Individuals differ in the degree of their emotional investment in and attachment to different physical objects in their environment. The proximity of clothing to self (PCS) concept is one example of psychological involvement with the environment of clothing through the process of imposing meaning on clothing.

The self-concept – how people see and feel about themselves in relation to the world – will have an important effect on how they grow older (Neuhaus, & Neuhaus,

1982). Negative feelings about oneself, physical appearance, sexual attractiveness, and job may become more intense in later years, when significant changes take place in these areas. Individuals may feel less positive about themselves, their adequacy, and their potential. However, people who are inquisitive and want to learn continue to become more self-actualizing, grow in self-awareness and in spirit, maintain friendships and interests, accept themselves, develop, and change. The sense of identity includes an inner assurance of continuity with the past but an awareness and acceptance of the change in the present.

In a study of older women and men, 55 and over, Lynn (1990) found significant differences in proximity of clothing to self when this group was divided into three age groups. PCS is "the psychological closeness of clothing to the self (Sontag, 1978; Sontag & Schlater, 1982). It consists of multiple dimensions including clothing in relation to: (1) self as structure; (2) self as process – communication of self to others; (3) self as process – response to judgments of others; (4) self-esteem – evaluative process dominant; (5) self-esteem – affective process dominant; and (6) body image and body cathexis (Sontag & Lee, 2004). The oldest group (75 and over) in Lynn's study expressed the highest proximity, both overall and with respect to clothing in relation to self as structure (i.e., self-image, self-identity). Clothing was a stronger expression of the old-old's individuality and personality than it was for the young-olds. These findings suggest that as people age, they may become more self-actualized and express this through their most proximate environment, clothing.

The self-actualizing person is one who is more fully functioning and lives a more enriched life than does the average person. Such an individual is seen as developing and

utilizing all of his/her unique capabilities, or potentialities, free of the inhibitions and emotional turmoil of those less self-actualizing. By using various dimensions of self-actualization, counselors or therapists apply a self-actualization measure to identify positive or bon-adaptive process to improve their client's mental health. Clear positive linkages between self-actualization and perceived well-being or mental health have been shown (Ryff, Kwan, & Singer, 2001; Shmotkin, 1998).

Balanced pair components of the Personal Orientation Inventory (POI), a measure of self-actualization, which are valuing, feeling, self-perception, awareness, and interpersonal sensitivity, may have positive relationships to the six dimensions of PCS. These two measures, that is, the POI and PCS Scale, include both affective and evaluative processes of self-esteem so exploring the relationships between these two concepts, self-actualization and proximity of clothing to self, is of interest to this study.

A self-actualizing person is primarily time competent and thus appears to live more fully in the here-and-now. Such a person is able to tie the past and the future to the present in meaningful continuity; appears to experience less guilt, regret, and resentment from the past than is the non-self-actualizing person; and aspirations are tied meaningfully to present working goals. There is an apparent faith in the future without over-realistic goals. A self-actualizing person's past and future orientations are depicted as reflecting positive mental health to the extent that the past is used for reflective thought and the future is tied to present goals (Shostrom, 1987). This explanation illustrates the positive impact of self-actualization on psychological-well-being as well as implies an association of self-actualization with a person's perceived age. An older person who is more time competent will have an ability to adapt to his/her environmental

changes more positively and to find coping strategies more easily in his/her later life. This person may also have similar perceived age compared with his/her actual chronological age. Ideally, this argument makes sense.

However, many social scientists (e.g., gerontologists) find that feeling younger than one's age has been associated with various dimensions of physical, psychological, and social well-being even when the effects of several confounding variables were statistically controlled (Baum & Boxley, 1983). Younger identified age was related to internal perceived control, greater purpose in life, and active participation in an affiliated group. Therefore, it is possible to say that if a self-actualized older person has younger or similar perceived age to his/her chronological age, then these will lead to older person's positive psychological well-being and successful aging.

Under the human ecology theory, this research mainly focuses on the individual self-system (older person's self-system) and the clothing environment, and presents one way to age successfully. Based on the ecological self framework (Sontag, Peteu, and Lee, 1997), this research develops theoretical linkages of important variables with psychological closeness of clothing to the self. Biological characteristics of age and sex, respectively and psychosocial characteristics in perceptions and experiences such as age identity and self-assessed health are used. With respect to incorporation of environment, proximity of clothing to self (PCS) is the chosen concept. Self-actualization is a response to the environment. Self-actualization is one of human needs. Clothing is a resource considered as human-built environment, and elderly individuals may choose this specific resource to help meet this need. Life satisfaction which measures psychological well-being, one component of successful aging, is the personal outcome investigated.

Clothing is used as a non-human resource to help elderly individuals adapt positively to biological, social, and psychological changes through their life span. Other personal resources such as age identity, self-assessed health, and self-actualization also influence their psychological well-being. Figure 2 presents these conceptual relationships in a self-system within a human ecological framework. Chronological age and sex are chosen as biological characteristics of elderly individuals. These two variables are outside of the self-system and are characteristics of the person. Age identity and self-assessed health are biological and psychological characteristics interpreted through perception and experiences with various environments. PCS is a relation of a selectively incorporated environment with the self and influences self-actualization which is a cognitive and affective response to the environment. Interaction among the above variables influence elderly individuals' psychological well- being which is a personal outcome and here is considered as one component of successful aging.

Chronological age, a biological characteristic of the person, influences one's perceived age or age identity, and one's psychological closeness of clothing to self, PCS. As an older person ages chronologically, he or she increases his or her level of age identity and level of PCS. Another biological characteristic, sex, also influences level of PCS. Based on previous research (Lynn, 1990), it is proposed that female elderly individuals will have higher PCS than male elderly individuals. PCS, incorporation of clothing with the self, positively influences self-actualization which is one among various human needs. Self-actualization is considered as cognitive and affective responses to one's environment, of which one is clothing. If a person has high PCS, he or she will have a tendency to be more self-actualized.

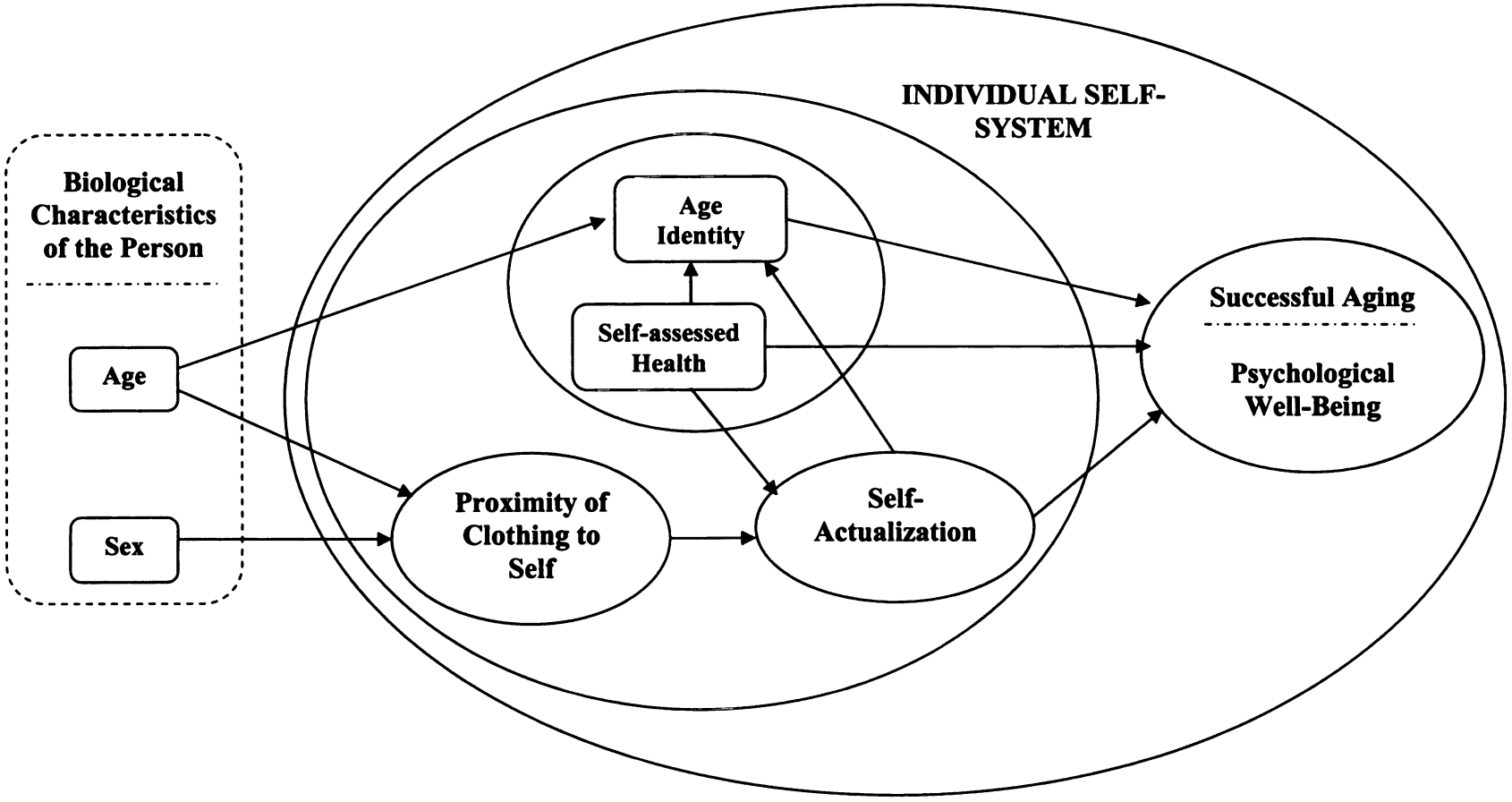


Figure 2. Conceptual model for this study.

Self-assessed health, the biological (physical health) and psychological (mental health) characteristic in perception and experience, is negatively related with age identity, self-actualization, and psychological well-being. An elderly individual who assesses himself or herself as being in good health will feel younger than his or her chronological age and lead to satisfaction with life. Self-actualization may also influence an elderly individual's age identity. If a person is more self-actualized or self-fulfilled, he or she may feel younger than or similar to his or her chronological age and then this, too, will increase his or her psychological well-being; or, if a person has high proximity of clothing to self and satisfies his or her self-actualization need, he or she may also have a high level of psychological well-being. Hypotheses guided by this conceptual model are presented under the heading of structural model testing within data analysis procedure in Chapter III.

Theoretical Definitions

The theoretical definitions of concepts relevant to this study are found below and summarized in Table 1. Also, listed in Table 1 are the indicators of the concepts used in this study which will be discussed later in this chapter.

Proximity of Clothing to Self

Proximity of Clothing to Self (PCS) is "the psychological closeness of clothing to the self" (Sontag, 1978; Sontag & Schlater, 1982). It consists of multiple dimensions; in a recent study, Sontag and Lee (2004) proposed six dimensions including clothing in relation to: (1) self as structure; (2) self as process – communication of self to others; (3) self as process – response to judgments of others; (4) self-esteem – evaluative process dominant; (5) self-esteem – affective process dominant; and (6) body image and body

Table 1. *Theoretical Definitions and Indicators of the Concepts*

Concept	Theoretical Definition	Indicator
Proximity of Clothing to Self	Psychological closeness of clothing to the self which consists of multiple dimensions including clothing in relation to: (1) self as structure; (2) self as process – communication of self to others; (3) self as process – response to judgments of others; (4) self-esteem – evaluative process dominant; (5) self-esteem – affective process dominant; and (6) body image and body cathexis (Sontag & Lee, 2004).	A person's score on each dimension of the Proximity of Clothing to Self Scale. Each dimension is indicated by the extent to which respondents think each of a set of statements is true of them, on a 6-point Likert-type scale (Sontag & Lee, 2004).
Age Identity	Labels that reflect how old or young individuals perceive themselves to be. It implies a relationship between individuals and the age group with which they feel an affinity either directly by age or indirectly through shared characteristics (Logan, Ward, & Spitze, 1992).	A person's score on four dimensions of the Cognitive Age Scale. Each person is asked to rate his/her self-perceived age status by specifying the absolute chronological age that most closely matches the way he/she feels, looks, acts, and thinks. Self-perceived age status ranges from 20s to 90s (Barak, 1987).
Self-Actualization	Level of self-fulfillment, namely, the tendency for the person to become actualized in what he or she is potentially. This tendency might be phrased as the desire to become more and more what one is, to become everything that one is capable of becoming (Maslow, 1970).	A person's combined raw score on two major scales of Shostrom's Personal Orientation Inventory, which are time-competent (T_C) and inner-directed (I) scales. Scoring in this manner uses all items once, making 150 the highest score possible (Shostrom, 1987).

Table 1. (cont.)

Concept	Theoretical Definition	Indicator
Psychological well-being	Positive psychological functioning that encompasses a breath of wellness, focusing on one's positive affects and self-judgments (Ryff & Keyes, 1995; Ryff, 1989)	A person's score on the 13-item version of the Life Satisfaction Index (LSIZ) using a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree) (Wood, Wylie, & Sheafor, 1969).
Self-assessed health	The individual's perception and evaluation of his or her overall physical health (Liang, 1986).	A person's score on an 11-point self-reported measure. The scale ranges from 0 to 10, where 0 indicates Poor Health, 5 indicates Average Health, and 10 indicates Excellent Health. A person's score on how many times he or she has been sick or was unable to carry out usual activities during the last six months using a 5-point scale with "*1*" as "*None*," "*2*" as "*Once*," "*3*" as "*Less than 5 times*," "*4*" as "*5 to 10 times*," and "*5*" as "*Over 10 times*." Combined scores of the above two items are used (Passman, 1995).
Chronological age	The number of years from birth that a person has lived.	A person's reported chronological age, in years.
Sex	The sexual biological categories of females and males.	A person's identification of his or her sex as male or female.

cathexis. Definitions of the dimensions of PCS reported in Sontag and Lee (2004) are applied to this study and are given verbatim as follows:

> *Dimension 1*: Clothing in Relation to Self as Structure. Clothing is part of an organized set of perceptions of the self in a person's consciousness. Clothing, as a component of the material self, contributes to a sense of unity with the person and constitutes part of the person's identity. As such, clothing reflects or expresses a person's identity, personality, self-regard, values, attitudes, beliefs, or moods. Pictures of the self from the past may exist in memory (p.166).
>
> *Introduction to Dimensions 2 and 3*: Clothing in Relation to Self as Process. Clothing is an aspect of appearance by which the self is established and validated through communication of self to others, perception of how the self looks to others, and actual or imagined judgment of self by others. Clothing enables a person to experiment with different selves and facilitates role taking. This two-way interactive process involves the communication of self to others and the response to judgments of others (p. 166).
>
> *Dimension 2*: Clothing in Relation to Self as Process – Communication of Self to Others. Clothing communicates information about a person's identity (personal, interpersonal, or group), values, attitudes, moods, and self-regard to others and facilitates the enactment of social roles. The person consciously selects or chooses clothing to convey messages about the self to others or to experiment with different identities (p.166).
>
> *Dimension 3*: Clothing in Relation to Self as Process – Response to Judgments of Others. The person imagines how the self appears to others through clothing. The person may respond affectively, cognitively, or behaviorally to an actual or imagined judgment of the self by others. Subsequently, the judgment may affect self-validation (p.167).
>
> *Dimension 4*: Clothing in Relation to Self-esteem: Evaluative Process Dominant. Clothing affects a person's evaluation of self-worth, self-regard, or self-respect, generally expressed in terms of cognitive evaluation or affective evaluation. Specifically, clothing can positively or negatively affect a person's sense of personal and interpersonal competence including personal efficacy, mastery of the environment, usefulness, social adequacy, and desirability. Through a person's appearance in or use of clothing, the person engages in cognitive or affective evaluation of self, implicitly or explicitly, in comparison with a personal and social standard. A person's evaluation of his or her clothing can affect his or her global self-esteem or, more specifically, confidence in his or her abilities, qualities, personal features, or performances. Conversely, a person's self-evaluation or self-judgment can affect his or her attitudes or behaviors toward clothing (p.167).

> *Dimension 5*: Clothing in Relation to Self-esteem – Affective Process Dominant. Clothing evokes a generalized emotional response or affect directed toward the self. This may take the form of positive or negative affect related to self-love, self-acceptance, or self-cathexis (i.e., satisfaction) and may have behavioral consequences. Whereas the affective process results from implicit evaluation with respect to some ideal or standard for the material self, the emphasis is on the general or global feeling expressive of self-esteem. A person's self-esteem also may affect the person's feelings about or behavior toward clothing. Finally, the care that the person gives to clothing reflects or affects his or her self-feelings. This dimension does not refer to mood or to all emotions, but only to those emotions that are directed toward the self (p.167).
>
> *Dimension 6*: Clothing in Relation to Body Image and Body Cathexis. Clothing creates, modifies, or affects body image or body cathexis and may affect self-feelings. In turn, body image or body cathexis may affect clothing behavior. Body image or body cathexis may affect satisfaction with clothing and self-esteem. Clothing may enhance or reflect body satisfaction or compensate for body dissatisfaction (p.168).

Age Identity.

Subjectively experienced aging reflects an individual's interpretation of the aging process. It depends not only on one's chronological age but also on age-roles perceived to be appropriate or desired at certain chronological ages. Age-role self-concepts are measured by a process in which individuals identify themselves with age-referents from a perceived age role perspective, that is, age identity.

Subjective age or age identity refers to labels that reflect how old or young individuals perceive themselves to be. It implies a relationship between individuals and the age group with which they feel an affinity either directly by age or indirectly through shared characteristics (Logan, et al., 1992; Steitz & McClary, 1988).

Self-actualization

Self-actualization refers to the need for self-fulfillment, namely, to the tendency for the person to become actualized in what he or she is potentially. This tendency might be phrased as the need to become more and more what one is, to become everything that

one is capable of becoming (Maslow, 1970). Maslow (1968) argues that all definitions of self-actualization accept or imply:

> . . . acceptance and expression of the inner core or self, i.e., actualization of these latent capacities, and potentialities, 'full functioning,' availability of the human and personal essence. (b) They all imply minimal presence of ill health, neurosis, psychosis, of loss or diminution of the basic human and personal capacities (p. 197).

Knapp (1971) sees a highly self-actualized individual as:

> One who utilizes his talents and capabilities more fully, lives in the present rather than dwelling in the past or the future, functions relatively autonomously, and tends to have a more benevolent outlook on life and on human nature than the average person (p. 36).

Rogers (1961) described the self-actualizing person as "fully functioning, for example:

> He is more able to live fully in and with each and all of his feelings and reactions. . . . He is more able to permit his total organism to function freely in all its complexity in selecting, from a multitude of possibilities, that behavior which in this moment of time will be the most generally and genuinely satisfying. . . . He is more able to experience all of his feelings; he is his own sifter of evidence, and is more open to evidence from all sources. . . . He is becoming a more fully functioning organism, and because of awareness of himself which flows freely in and through his experience, he is becoming a more fully functioning person (pp. 191-192).

Combs and Snygg (1959) described the self-actualizing person as:

> . . . one who has achieved a high degree of need satisfaction. These are people who feel generally capable of coping with life. . . . They see themselves in essentially positive ways and as a consequence are free and open to their experience, able to accept both themselves and others and to identify strongly with their fellow-men. . . . Events seem to them to lie well within their own capabilities, and they feel capable of dealing with life effectively and efficiently (pp. 239-240).

The above insertions from various authors support a positive relationship between self-actualization and psychological well-being, one component of successful aging that this researcher proposes. A successfully aging individual has a tendency to see him or herself more positively, is able to cope with his or her life more positively, and gives

more attention to his or her potential and capabilities. Self-actualization need indeed includes all these components. Thus, an elderly individual who meets his or her self-actualization need has a tendency to reach a high level of psychological well-being, one aspect of successful aging.

Psychological Well-being

Perceived quality of life has to do with the perception of, and the level of satisfaction or confidence with, one's conditions, relationships, and surroundings. Well-being is the state of being happy, healthy, or well. There are various dimensions of well-being such as economic, physical, social, emotional, environmental, political, and spiritual (McGregor & Goldsmith, 1998). In this study, psychological well-being is used and defined as a positive psychological functioning that encompasses a breath of wellness, focusing on one's positive affects and self-judgments (Ryff & Keyes, 1995; Ryff, 1989).

Self-assessed Health

It is an individual's perception and evaluation of his or her overall physical health (Liang, 1986).

Chronological Age

Age is defined as the number of years from birth that a person has lived.

Sex

Sex is used to indicate the sexual biological categories of females and males.

Indicators

Table 1, previously presented, also describes the indicators of the concepts in the conceptual model. Reliability or validity measures that are available for any of the following indicators are reported under the title of instrumentation in Chapter III.

Proximity of Clothing to Self Scale

A person's score on each PCS dimension obtained by summing scores for the items included in each subscale of the Proximity of Clothing to Self Scale. Each dimension is indicated by the extent to which respondents think each of a set of statements within the dimension is true of them on a 6-point Likert-type scale ranging from 1 (never or almost never true of me) to 6 (always or almost always true of me).

Cognitive Age Scale

Cognitive Age Scale, (Barak, 1987; Kastenbaum, Derbin, Sabatini, & Artt, 1972) is used to measure the concept of age identity. It measures four dimensions related to functional areas of the self: psychological (Feel/Age), physical (Look/Age), social/occupational (Do/Age, and intellectual (Interest/Age). Each respondent is asked to rate his/her self-perceived age status by specifying the absolute chronological age that most closely matches the way he/she feels, looks, acts, and thinks. The scoring of the scale uses a decade-matching format (e.g., 20s, 30s). His or her self-perceived age status ranges from 20s to 90s.

Personal Orientation Inventory

Self-actualization is measured by Shostrom's Personal Orientation Inventory (1987). The 150 items have been categorized into two major scales which are the time-competent (T_C) scale with 23 items and the inner-directed (I) scale with 127 items. In other words, these two scales use every item once, with a total of 150 items. Each item consists of two choices. The "incorrect" choices for the time-competent scale are categorized under time-incompetent. The "incorrect" choices for the inner-directed scale are categorized under other-directed. A person's combined raw score of the two major

scales is used. The highest score possible is 150.

For correlation analysis for research objective 3, 10 POI subscales are used. These subscales are listed as self-actualizing value (SAV; 26 items), existentiality (Ex; 32 items), feeling reactivity (Fr; 23 items), spontaneity (S; 18 items), self-regard (Sr; 16 items), self-acceptance (Sa; 26 items), nature of man (Nc; 16 items), synergy (Sy; 9 items), acceptance of aggression (A; 25 items), and capacity for intimate contact (C; 28 items). The highest score possible on each subscale is the number of items. For instance, the highest score possible for SAV is 26.

Life Satisfaction Index

Psychological well-being is measured by the 13-item version of the Life Satisfaction Index (LSIZ) using a 5-point Likert-type scale, ranging from "1" as *strongly disagree* to "5" as *strongly agree* in this study.

Life satisfaction is a term adopted by Neugarten, Havighurst, and Tobin (1961) in reference to five components which comprise the concept of psychological well-being. It originally included 20 items and was called Life Satisfaction Index A (LSIA) by Neugarten et al. (1961). This psychological well-being measure can be used to define operationally "successful aging" (p.134). It is thought that those who are "successfully aging" are also satisfied with life.

Self-assessed Health

Self-assessed health is first indicated by an 11-point self-reported measure. Respondents are asked to rate their current overall health on a scale of 0 to 10, where 0 indicates Poor Health, 5 indicates Average Health, and 10 indicates Excellent Health. Second, respondents indicate in the bracket next to the frequency that applies to them

about how many times they have been sick or they were unable to carry out usual activities during the last six months. The researcher coded the 5-point frequency scale with "5" as *None*, "4" as *Once*, "3" as *Less than 5 times*, "2" as *5 to 10 items*, and "1" as *Over 10 Times*. Higher numbers indicate greater health of the respondent. Values of the second question were transformed to the same scale range with the first health question and then values of the two scale items were summed and averaged to construct participants' self-assessment of health status.

Chronological Age

Chronological age is treated as a continuous variable and measured in years. Respondents were asked to answer the question, "In what year were you born?", and then the year of birth was subtracted from the year 2005.

Sex

Sex is a person's identification of his or her sex as male or female. Sex was treated as a dichotomous variable: "1" for *male*, and "2" for *female*.

Assumptions

In this section, the assumptions of the study are separately stated in two categories: theoretical assumptions and methodological assumptions.

Theoretical Assumptions

1. Human beings live in multiple environments which mutually interact with them (Bubolz & Sontag, 1993).
2. A sense of self is developed or modified when a human being interacts with the environment.
3. Through the interaction with physical environments, human beings expand

themselves by investing emotionally in selected physical environments, and in turn perceive the physical environment as a part of the self (Levin, 1992).

4. Clothing is the most proximal human-built environment of human beings and meets various levels of needs.
5. Human beings fulfill their various levels of needs through various need satisfiers.

Methodological Assumptions

1. Respondents are able to clearly read and answer the questionnaires.
2. The elderly sample frame purchased from the sampling company is representative of the entire elderly population in the United States.

CHAPTER II

REVIEW OF LITERATURE

This section incorporates a review of literature from gerontology, sociology, psychology, and clothing research to explain older person's successful aging in terms of selected personal characteristics, including proximity of clothing to self, self-actualization, age identity, self-assessed health, and psychological well-being.

Research focusing on older persons is reviewed with the exception of the research on proximity of clothing to self (PCS) and self-actualization. Little research has been done on these two concepts with older persons. That research which has been conducted on older persons is included as well as research with other age groups.

Studies in Self-concept, Self-esteem and Clothing

Self-concept and Self-esteem

Research has shown that clothing, self-concept, and self-esteem are related (Callis, 1982; Holloman, 1989; Merritt, 1978; Sontag & Schlater, 1982; Stone, 1962) and that people use clothing to enhance their self-esteem (Kaiser, 1990); yet, much of this research has dealt with adolescents or college students. Research on clothing and the self-esteem of older persons has been limited. Holloman (1989) recommended additional research on the relationship between clothing and self-esteem at various stages in the life cycle.

Although many terms relating to the self are discussed in the literature, self-esteem refers to the feeling of self-worth and the basic acknowledgment that an individual is a person of value (George, 1987). Self-esteem is believed to be a

component of self-concept which is also a global term covering all of an individual's thoughts and feelings, the overall picture or image an individual has of himself or herself. There are three areas of the self-concept: "the extant self (how the individual sees him or herself), the desired self (how he or she would like to see him or herself), and the presenting self (how he or she shows him or herself to others)" (Rosenberg, 1979, p. 9).

The distinction between self-concept and self-esteem provides a basis for understanding the self in regard to clothing and appearance. The distinction is dependent upon contrasting the structural component and evaluative component of the self. In self-concept the individual is perceived as an object, whereas self-esteem is "evaluative and can be assessed quantitatively (i.e., as 'high' or 'low', 'positive' or 'negative')" (George, 1987, p. 593).

According to Rosenberg (1979), one aspect of the presenting self is the protection and enhancement of self-esteem. The perceived self (i.e., what we think others think of us) and self-esteem are similar. Rosenberg expands the definition of high self-esteem to mean an individual who has self-respect and considers him/herself a person of worth, whereas a person with low self-esteem "lacks respect for himself, considers himself unworthy, inadequate, lacking of love, or otherwise seriously deficient as a person" (p. 54). Significant others influence self-concept, which in turn generally affects behavior (Shoffner, 1969). "The feeling that one is important to a significant other is probably essential to a feeling of self-worth" (Rosenberg, 1965, p. 146).

According to Maslow (1970), everyone has a need for a high evaluation of themselves or self-esteem which leads to feelings of self-confidence, worth, strength, capability, and being useful and necessary. Thwarting these needs produces feelings of

inferiority, weakness, or helplessness (Maslow, 1954). Rosenberg (1979) also suggested that self-esteem problems are at the heart of neuroses, which result in a feeling of worthlessness and the belief that one is not adequate to maintain control over situations.

Atchley (1985) emphasized that only 20% of older people have low self-esteem, with the majority of these having higher expectations than accomplishments. "Most older people do not have a negative self-image; rather self-esteem tends to increase with age" (Atchley, p. 104). Younger age perception among the elderly can be linked to higher self-esteem until poor health changes one's outlook on life (Terpstra, Terpstra, Plawecki, & Streeter, 1989). Others experience loss of self-esteem late in life due to: (1) a sudden reduction in physical ability which may result in poor health, creating an element of dependency (Lee & Shehan, 1989); (2) a vulnerable self-image; and (3) loss of control over their physical environment, such as place of residence (p. 106).

Within the North American context, the self is understood to be rooted in a set of internal attributes such as abilities, talents, personality traits, preferences, roles, subjective feeling states, and attitudes (Herzog & Markus, 1999). Markus, Holmberg, Herzog, and Franks (1994), in their representative sample of 1,500 American adults using an open-ended question, found that self-concepts were dominated by reports of attributes – physical attributes, personality attributes, and mention of family roles. The remaining responses focused on actions of self, describing the self in terms of what the individuals were doing, rather than who they are. Herzog and Markus also argued that the viable self-concept seemed to depend on being able to continuously and confidently express and affirm the positive features of the self. In a close-ended part of their survey, Markus and her colleagues found several major factors that adults used to describe

themselves. Those included mental health (e.g., depressed, content), upstanding (e.g., organized, responsible), social (e.g., caring, friendly), vocation (e.g., involved in paid work, hardworking), accommodating (e.g., tolerant, realistic), attractive (e.g., physically attractive, intelligent), inventive (e.g., curious, sense of humor), avocation (e.g., involved in leisure activities, active), family roles, social characteristics, and autonomy (e.g., dependent, independent). Taken together, these self-descriptions reveal that people in midlife and beyond (i.e., older people) think about themselves in varied and multifaceted ways.

The self is as much about doing as about being, as much about process as about content. In behaviors, the self manifests, expresses, and maintains itself (Herzog & Markus, 1999). There is an ongoing process of mutual constitution between the self-concept and behavior. Various actions are organized and integrated within the self, and the self then serves to construct or provide meaning and coherence to a person's experience. Herzog and Markus explain that activities might be chosen to promote a desirable possible self or to avoid an undesirable possible self. From a life span perspective, people refine their patterns of activities as they gain experience with behaviors, strategies, and tasks and harmonize them with their self-system to achieve continuity and satisfaction in their selves and their lifestyles (Atchley, 1993). Atchley (1989) presented continuity theory and argued that many activities continue into older age, and therefore an overall sense of continuity of the self typically predominates. Baltes and Baltes (1990) have proposed the principle of compensation according to which activities are altered with other activities to accomplish the same tasks and express the same selves. Similarly, Brim (1988) has suggested a hierarchy of adaptive changes in

response to experiences of failure of behaviors.

Because of its dynamic, adaptive nature, the well-functioning self is expected to bear a relationship to well-being. Rowe and Kahn (1987) demonstrated a positive relationship between a self-schema of competence – also called sense of control, self-efficacy, mastery, self-directedness – and health and well-being. Self-perception is submitted to social, temporal, domain, or ideal comparisons in defending and promoting the self. Through these various processes of selective comparison the active self-system engages in emotion control and thereby builds well-being and self-esteem (Taylor, Wayment, & Carillo, 1995). Herzog, Frank, Markus, and Holmberg (1998) also argued that this form of self-making might ultimately be responsible for more successful aging.

In sum, the self, self-concept, self-esteem, and self-system are useful theoretical concepts for studying personal adaptation in aging. The self-system consists of a number of knowledge structures that older persons hold about themselves and a set of cognitive functions that actively integrate those knowledge structures across their life spans. Indeed, the self-system is actively involved in structuring and interpreting experiences, motivating behaviors, managing emotions, and providing a sense of continuity. It is not a static part of them but an integral part of them, shaping them and, in turn, being shaped by them.

Relationships of Self-concept and Self-esteem with Clothing

Because clothing is in such close proximity to the body wherever the person goes, researchers have sought to determine if a relationship exists among clothing, self-esteem, and self-concept (Creekmore, 1974; Holloman, 1989; Horn, 1975; Humphrey, Klaasen, & Creekmore, 1971; Sontag & Schlater, 1982). Solomon and Schopler (1982) believed

clothing was related to the self-concept because a person's choice of clothing can alter appearance and affect the way he/she is perceived by others. "An individual's self-image is largely made up of what others think of him" (Shoffner, 1969, p. 24). Research among adolescents by Creekmore, and Humphrey, Klaasen, and Creekmore shows that clothing facilitates communication of an individual's knowledge of and pictures of him/herself.

Hoffman and Bader (1974) suggested that clothing might influence and support self-esteem for people of all ages. This may essentially apply to older people who may have lost that support through termination of employment status and death of friends and family (Havighurst, 1963; 1961). Creekmore (1963) also found a possible relation between self-esteem and clothing. In her study using female college students, she found that appearance is associated with need for belonging which is necessary for self-esteem.

Chowdhary (1988) found evidence that clothing was used as a coping strategy by elderly institutionalized persons, particularly in terms of its enhancement of feelings of self-esteem. She also found that elderly women have higher clothing importance than elderly men. Bader (1963) argued that self-worth and self-respect were important needs of the elderly and that clothing might promote the appearances of those in maintaining self-image and in achieving the recognition and acceptance of others. She also added that style and fit were as important to the elderly now as they were when they were young.

Body image, a concept of a person's own body, grows out of present and past perceptions, and has been found to be important in self-concept. A person's body image affects his self-concept, which in turn influences his personality (Darden, 1975). An older person who is satisfied with his/her body image may have a more positive self-concept and self-image than a person who is dissatisfied with his/her body. "Coping with

aging is usually a matter of defending a positive self-image" (Atchley, 1985, p. 111). However, Joyner (1993) found a lack of relation between clothing interest and body cathexis in women over 55 years, and interpreted that most women might be interested in clothing regardless of their levels of satisfaction with their bodies.

Breytspraak and George (1979) suggest that differences in self-esteem are due to age-related events such as retirement, rather than specifically to the aging process. However, they also argued that a sudden decline in health or physical ability might leave the older person less in control of his or her independence.

The way in which a person chooses to dress affects self-perception and self-concept. Ryan (1966) states, "the self-concept is the individual's perception of his own characteristics, his abilities or his failings, his appearance, and the total organization of characteristics which he perceives as distinguishing him as an individual" (p. 82). Treece (1959) argued that "clothing might help to indicate one's concept of his personal worth and esteem (p. 6)." A healthy self-concept in adults is a result of developing a positive self-concept in young children, creating more self-confidence. Read (1950) argued that the parent who selects self-help clothing for a young child encourages development of independence and self-confidence. Clothing behavior can serve as a cue to detecting low self-esteem (Kaiser, 1990), or it may serve to camouflage low self-esteem (Treece, 1966).

Self-esteem, a relatively stable characteristic, is considered to be the message an individual conveys to others through verbal and overt behaviors (Reed, 1973). While feelings of being valued and having a purpose in life are particularly difficult for the elderly to maintain, especially on a reduced income (Wells, 1982), adequate clothing for older people can affect self-concept and social participation (Chowdhary, 2000).

Chowdhary found that active social participation by older persons required the appropriate selection of design and variety for presentation of self while interacting with others in a variety of contexts. Clothes are an important factor in developing feelings of self-confidence as well as self-respect (Smathers & Horridge, 1979). "Clothing can be an important internal cue affecting an individual's self-concept and self-confidence, . . . being conscious of good appearance frees an individual from fear of criticism" (Teevan, 1984, p. 85).

Joyner (1993) examined the relationship of self-esteem, health, body satisfaction, and clothing interest of 119 women age 55 and older utilizing a survey interview. Her data revealed that significantly positive relations between the women's clothing interest and self-esteem. She also found significant relationship between health and clothing interest but no significant relationship between body satisfaction and clothing interest. An implication of her findings was that clothing might serve as a tool to enhance coping ability of older women by making them feel good about themselves.

Baggs (1988) conducted a study to determine whether there were differences in clothing interest, body satisfaction, fashion opinion leadership qualities, and self-esteem among underweight, average weight, and overweight college females. The data indicated no significant difference in clothing interest, self-esteem, and fashion opinion leadership qualities for underweight, average weight, and overweight females. Positive correlations were found between body satisfaction and self-esteem, clothing interest and fashion opinion leadership qualities, clothing interest and body satisfaction, and self-esteem and fashion opinion leadership qualities. Creekmore (1974) also found a positive relationship between body cathexis and self-esteem of adolescents. In her study, Creekmore

concluded that the use of clothing to draw attention to self reflected a psychological sense of well being and satisfaction with a developing physical body, regardless of sex.

In sum, people tend to reflect and communicate or express their actual and ideal images of self-concept through use of clothing. Older persons use clothing to enhance their self-esteem and participate with others more actively. Clothing has been used as a need satisfier to promote the appearances of older persons in maintaining self-image and in achieving the recognition and acceptance of others. Previous research demonstrates that an older person's self-system is not static but more dynamic and integral. How can clothing stimulate or facilitate this dynamic and creative process of the self-system for older persons to continue or enhance their healthy self-image in their later life? This research aims to reach this goal.

Studies in Proximity of Clothing to Self

A multidimensional concept, proximity of clothing to self (PCS), was defined and an indicator of it was developed within the context of quality of life theory building and assessment (Sontag, 1978; Sontag & Schlater, 1982). PCS is "the psychological closeness of clothing to the self" (Sontag; Sontag & Schlater). Fuller descriptions of the dimensions of PCS comprising the concept were reported in Chapter I.

According to quality of life theory, an individual's sense of well-being is determined by his or her degree of satisfaction with life concerns which are perceived as being psychologically close to the self (Andrews & Withey, 1976; Sontag & Schlater, 1982). Sontag (1978) proposed that affective evaluations of clothing as a life concern might be an indicator of an individual's perceived quality of life (PQOL). She found that a much stronger correlation existed for men's affective evaluations of clothing with

PQOL than women's (r = .45 and r = .25, respectively), and that the relation between clothing and PQOL was mediated by feelings about the self. She also found that affective evaluation of clothing was a significant predictor of men's PQOL (standardized regression coefficient = .21). She expected that the PQOL would be more strongly related to clothing for people who view clothing as closely associated with the self than for those who perceive clothing as psychologically remote from themselves. She found that people high on the initially developed PCS scale had stronger feelings of personal accomplishment, higher correlation between PQOL and clothing, and stronger feelings of clothing importance, compared to people with low scores on the PCS scale. In sum, clothing was found to contribute to a sense of well-being along with other domains of life important to individuals. Perhaps more significant is this question: "How could clothing be used to support the self, in terms of self-concept, self-esteem and self-actualization?"

Several research studies that were conducted at the University of Illinois utilized the PCS concept in explaining apparel involvement in purchasing behavior (Vreeman, 1985), clothing needs for elderly consumers (Lynn, 1990), and individual differences in self-esteem among adolescents (Schmerbauch, 1993).

Through a telephone survey, Vreeman (1985) found a significant difference in apparel involvement between persons (who ranged in age from 19 to 82 years) with low and high levels of PCS. She developed two statements of each dimension of proximity of clothing to self based on previous studies (Sontag & Schlater, 1982). Subjects with higher PCS tended to put more of their time and effort into looking at apparel and obtaining information from the media, to place greater importance on brand names and to enjoy shopping for clothing than those with lower PCS. These findings suggested that an

individual who perceives clothing to be more psychologically close to the self is more likely to be involved in clothing shopping behavior than a person with lower PCS.

Lynn (1990) and Schmerbauch (1993) argued that people possess different levels of PCS according to their developmental stages. Lynn (1990) investigated the clothing needs of the elderly and found chronological age differences in the elderly groups with regard to the degree of PCS. Lynn developed a questionnaire of five items for each of six PCS dimensions conceptualized by Sontag and Schlater (1982). The old-olds (75 and over) had higher psychological closeness of clothing to the self than middle-olds (65-74) and young-olds (55-64). Lynn found that clothing was a stronger reflection of the oldest respondents' individuality and personality than for the youngest respondents. This result may suggest that old-olds have firm self-definition and an ability to reflect or express themselves through clothing because they have gone through a variety of life changes. This supports Bader's (1963) argument that self-worth and self-respect were important needs of the elderly and that clothing promotes their appearances in maintaining a positive self-image and in achieving the recognition and acceptance of others. These findings suggest that as people age, they may become more self-actualized and express this through their most proximate environment, clothing. In an expansion of Lynn's study, this research also examines elderly individuals who are aged 65 and over and explores the relationships of different age categories with PCS.

Lynn (1990) also hypothesized that there would be significant difference between elderly consumers stratified into perceived age categories of young (perceived age of 25 to 45 years), middle-aged (perceived age of 46 to 59 years), and old (perceived age of 60 to 90 years) for level of PCS. Across the age groups, a significant difference was present

for one of the six PCS dimensions (clothing in relation to the evaluative process of self-esteem); those who perceived themselves to be middle-aged received the highest score on this dimension of PCS, followed by those who perceived themselves to be young-old and old-old. Her result suggests the need for a further investigation of relationships between age identity, PCS and self-actualization. If a person is more self-actualized, he or she has already met self-esteem need according to Maslow's (1970) hierarchy of needs. Assuming that the PCS dimension, clothing in relation to the evaluative process of self-esteem, is related to one subset of self-esteem and he or she has a high score on this dimension, then he or she may have a high tendency to be self-actualized. A self-actualized person has a tendency to live in the present rather than in the past or future so one may perceive him or herself younger than or similar to his or her chronological age. Further discussion is presented under the headings of age identity and self-actualization.

Schmerbauch (1993) studied the relationship between PCS and adolescent's self-esteem. Her study showed that subject's gender and school year related to PCS scores. Females tended to feel more psychologically close to clothing than the male group. She also found that the 9th grade students, especially for the female group, felt more psychologically close to clothing than 12th grade students. The difference was more notable in the processual dimension in relation to other's judgments. Lee (1997) thought that this difference might occur because the subjects in lower grades might be less familiar with their school environment, were more conscious about themselves, and would seek others' approval more than those in the higher grades. Schmerbauch also found that females with low self-esteem in the 9th grade were more likely to have higher psychological closeness of clothing to self than females with low self-esteem in the 12th

grade. This shows that clothing may be a significant facilitator to compensate for low self-esteem.

The above researchers have applied the PCS concept in their studies but still there was no validated standardized measurement instrument for scaling people on the multidimensional attribute, PCS. PCS was originally conceptualized by Sontag (1978) who had initially developed a 3-point rating scale for PCS based on responses to an open-ended question. From this base, Sontag and Lee (1994) administered a series of open-ended questions pertaining to the PCS dimensions to 190 female and male adolescents, young adults, middle-aged and older adults and developed items grounded in people's experience with clothing and based on their written expression across both age and sex. Based on their responses, they constructed 78 items distributed among the six dimensions of PCS and redefined the definition and label of each dimension of PCS.

Sontag, Peteu, and Lee (1997) used the PCS Scale with these 78 items to study the self-system of adolescents. Within the self-system, one of the research questions was to look at the relationships of biological and psychosocial characteristics in perception and experience (age and gender) to incorporation of environment with self (PCS). Sontag, Peteu, and Lee found that there was a significant gender difference on three dimensions of PCS among the adolescents and reported that "girls incorporated clothing to a greater extent than did boys in their self-system with respect to the evaluative and affective processes of self-esteem and body image and body cathexis. Boys related to clothing most dominantly in relation to their identity, whereas girls related most dominantly to clothing in terms of its effect on self-feelings (p. 20)." Girls 15 and under had higher PCS than 17-year-olds in terms of *clothing in relation to self as structure*. Boys 15 and under

had PCS scores higher than boys at age 17 on *clothing in relation to self as process – response to judgments of others*. In addition, boys who had higher PCS scores than other boys were more interested in clothing than girls with high PCS scores on four of the six PCS dimensions. Their results suggest that boys are more interested in clothing when clothing helped them think positively and feel positive about themselves.

Lee (1997) explored the relationships of PCS to self-perception, clothing deprivation, and gender among another group of adolescents. Lee found that gender was a statistically significant predictor of the *clothing in relation to body image and body cathexis* dimension. She explained that "females tended to perceive that they modify or express their body image or feelings toward body through their clothing more than males (p. 144)." The female mean score was also higher than the male mean score in the *clothing in relation to self-esteem – affective process dominant* dimension and in the *clothing in relation to self-esteem – evaluative process dominant* dimension. The results of Lee's study on the possible relations between specific PCS dimensions and specific dimensions of self-perception showed that only the physical appearance domain of self-concept significantly and negatively predicted the *clothing in relation to body image and body cathexis* dimension while controlling for other domains of self-perception and gender. Self-perception domains (i.e., scholastic competence, social acceptance, romantic appeal, and self-worth domains) did not have significant effects on any PCS dimension.

Sontag and Lee (2004) employed confirmatory factor analysis (CFA) on the 78 PCS items using structural equation modeling (SEM) approach to test the construct validity of the PCS Scale for adolescents in high school. The initial 6-factor scale was not confirmed for this adolescent group. The correlation between PCS Dimensions 1 and 2

was .98, indicating high degree of collinearity; therefore, these two dimensions did not hold up and were combined into a single dimension, renamed *clothing in relation to self as structure – process I.* The correlation between PCS Dimensions 4 and 5 was 1.0, implying that adolescents did not discriminate between the evaluative and affective processes of self-esteem. Therefore, these two dimensions also were combined into a single dimension, renamed *clothing in relation to self-esteem – evaluative and affective processes.*

Sontag and Lee (2004) were not surprised at the merger of PCS Dimensions 4 and 5 but did not expect the merger of PCS Dimensions 1 and 2. They anticipated that it might be that "adolescents are still experimenting with who they are through the use of clothing and do not have a stable structure or image of the self (p.172). . . . It is possible that the latter may be separate factors in the minds of adults who have a longer history and experience in self-formation than do adolescents such that a more stable (however, not immutable) self has been achieved (p. 174)." The current research on elderly individuals discovers different results than proposed in Sontag and Lee's arguments. These findings are presented in Chapter IV.

Since the initially hypothesized 6-factor scale was not confirmed for adolescents, and content from the six dimensions was integrated into a 4-factor scale for use with this age group [i.e., *clothing in relation to self as structure – process I* (7 items), *clothing in relation to self as process II – response to judgments of others* (4 items), *clothing in relation to self-esteem – evaluative and affective processes* (8 items), and *clothing in relation to body image and body cathexis* (5 items)], further testing of construct validity of the PCS scale across the life span was suggested. In addition, posing hypotheses

relating PCS to other concepts in the clothing literature was recommended (Sontag & Lee, 2004). Through this review, clear relationships of PCS with selected demographic variables which are chronological age, and gender (or sex) are demonstrated. It is beneficial to study the relationship of clothing to other concepts with a well-confirmed PCS Scale for generating theory that explains the relation of clothing to the self.

Studies in Self-actualization and Clothing Variables

Abraham Maslow's Theory of Self-actualization

In *Motivation and Personality* and *Toward a Psychology of Being*, Maslow (1962, 1968 respectively) describes his study of self-actualized people. The subjects of his study were selected from among personal acquaintances, friends and from among the public. The positive criterion for selection was positive evidence of self-actualization (SA). Maslow used various research techniques such as test instruments, interviews, and observations in his longitudinal study and saw the self-actualizing person as developing and utilizing all of his/her unique capabilities, or potentialities, free of the inhibitions and emotional turmoil of those less self-actualized. Such an individual lives a more enriched life and is more fully functioning than the average person. In further explaining his self-actualizing subjects, Maslow says that they displayed many of the lesser human failings.

The writings of Carl Rogers (1961) along with those of Brammer and Shostrom (1960) reflect the same idea of the self-actualizing person as does Maslow. These authors suggest that such a person might be seen as the goal of the psychotherapeutic process.

Persons with self-actualizing characteristics have been described by Maslow as "psychologically healthy," "fully human," and "fully functioning," but these terms,

while summarizing characteristics, include a number of attributes that give a foundation to such a personality. The clinically described characteristics of the self-actualized individual, as viewed by Maslow (1970), are detailed below:

Superior perception of reality. The self-actualized individual possesses an unusual ability to judge people correctly and efficiently, and to detect the spurious, the fake, and the dishonest. Besides this ability to distinguish the real world of nature from the man-made world of concepts, abstractions, expectations, beliefs, and stereotypes, the self actualized individual accepts the unknown without fear, and often is attracted by it.

Increased acceptance of self, of others, and of nature. While not self-satisfied, self-actualized people accept their own natures and themselves without chagrin or complaint, or even thinking much about it. They do not assume a "protective coloring" or "pose;" neither do they appreciate artificialities in others. Self-acceptance is not self-complacency, and the "healthy" individual will feel remorse about discrepancies between what might be or ought to be.

Increased spontaneity. Self-actualized people can all be described as relatively spontaneous in behavior, in inner life, thoughts, and impulses. This spontaneousness is not necessarily unconventional behavior, but behavior that is marked by simplicity and naturalness. The spontaneity is related to codes of ethics that are relatively autonomous and individual.

Problem centering. Self-actualized people customarily have some mission in life, some tasks to fulfill, some problem outside themselves which enlists much of their energies. They are problem centered rather than ego centered. They are concerned with basic issues and questions of the type called philosophical or ethical.

Increased detachment and desire for privacy. The self-actualized individuals like solitude and privacy to a greater degree than the average person and can be solitary without harm to themselves or without discomfort. They find it easy to be aloof, reserved, calm and serene. The detachment and aloofness can be interpreted as cold, snobbish, unfriendly, or even hostile.

Autonomy and resistance to enculturation. Self-actualized people are relatively independent of the physical and social environment. They are dependent on their own potentiality and latent resources for their development and continued growth. They have been described as "self-contained."

Higher frequency of peak experiences. Emotions sometimes get strong enough, chaotic and wide spread enough to be called mystic experiences. It is quite important to disassociate this experience from any theological or supernatural reference. It is a feeling of simultaneous power and weakness, wonder and awe. A large proportion of self-actualized people report having had these experiences, and some had them fairly frequently.

Continued freshness of appreciation and richness of emotional reaction. Self-actualized people have a capacity to appreciate again and again, freshly and naively, some of the experiences that may have become stale to others. These experiences may be in the realm of beauty, but they choose individually what they consider beautiful objects – nature, children, sex, music, etc.; self-actualized people appreciate with pleasure, awe, wonder, and even ecstacy.

Increased identification with the human species. Self-actualized people have for human beings in general, a deep feeling of identification, sympathy, and affection, and

have a genuine desire to help the human race. However, they can have occasional feelings of anger, impatience, or disgust for individuals.

Interpersonal relations. Self-actualized people have deeper and more profound interpersonal relations than most people, but with high selectiveness. One consequence of this is especially deep ties with rather few individuals.

Democratic character structure. The self-actualized individual is democratic in the deepest sense. He or she finds it possible to learn from anyone who has something to teach – no matter what other characteristics he or she may have. The self-actualized person has respect for any human being, but selects character, capacity, and talent as measures rather than birth, race, blood, power, etc.

Greatly increased creativeness. This creativeness is in the sense of creativeness of small, naive children, and not of the creativeness of a Mozart. The self-actualized individual operates as less inhibited, less constricted, less encultured, so that a freshness and a certain spirit is upheld in whatever he or she does.

Certain changes in the value system. The value system for the self-actualized person has a firm foundation automatically furnished by the philosophic acceptance of the nature of one's self, of human nature, of much of social life, and of nature and physical reality. This philosophic acceptance promotes a comfortable relationship with reality, discrimination in regard to means and ends, and basically satisfied condition.

No study of the self-actualization of older persons, especially using POI, was found from the literature search. The POI manual includes all references that have used this measurement in various studies (Shostrom, 1987, pp. 34-57). This researcher examined all of those references under the given specific categories (i.e., primary POI

references: Published articles, primary POI references: Dissertations, papers, and unpublished articles, supplementary references, and supplemental bibliography) to find any study using older persons. Studies of the self-actualization of older persons since 1987 was examined through library search using key words such as older persons, self-actualization, Personal Orientation Inventory.

Self-actualization and Clothing

In clothing research, limited research has been conducted to explore the relationships of clothing variables to the self-actualization need of older persons as well as other populations. Therefore, the following reviews are not limited to older persons.

Creekmore (1963) conducted an exploratory study on 300 female students from a branch of a state university to discover possible relations between certain clothing behaviors, general values, and the striving for satisfaction of basic needs. A comparison of the mean scores in each class of variables revealed that the religious and aesthetic values were the most important; the physiological and self-actualizing needs were highest; and interest in appearance, status symbol use of clothing, and management emphasis were the three most important clothing behaviors. Creekmore found that specific and general clothing behaviors both related to specific value orientations and to specific needs. Emphasis on management of clothing was related for the economic type to the striving for physiological, self actualizing, and self-esteem needs; tactual emphasis was related for the sensuous type to satisfaction of self-esteem need and to striving for self-actualizing and cognitive needs. Her results were from female college students so they cannot be generalized to an elderly population. Although her work was the first to use the basic needs concept in clothing behavioral research, finding more reliable

measurement of basic needs was required. In addition, directional relationship between each different need and various clothing variables must be explored to develop strong theoretical linkages.

Using psychological systems theory as the conceptual framework, Pasnak and Ayres (1969) conducted a study of undergraduate students to determine whether fashion innovators and non-innovators were significantly different in clothing attitudes, level of self-actualization, and tolerance of ambiguity. The Personal Orientation Inventory (POI) was used to measure self-actualization, specifically two major scales (i.e., time-competent and inner-directed) and the ten subscales (i.e., self-actualizing value (SAV), existentiality (Ex), feeling reactivity (Fr), spontaneity (S), self-regard (Sr), self-acceptance (Sa), nature of man (Nc), synergy (Sy), acceptance of aggression (A), capacity for intimate contact (C)).

The following associations were found to be significant. The innovators were significantly higher on self-acceptance (Sa) than were the non-innovators. They also had a tendency to be oriented more to the present than to the past or future (i.e., time-competent). The more fashion innovative subjects also scored higher than the less innovative subjects on acceptance of aggression (A) and on self-actualization value (SAV). Pasnak and Ayres (1969) also found that the "nature of man (Nc)," one of the POI sub-scales, correlated with dressing of self, indicating that a constructive view of human's nature might be a part of the individual's orientation which allowed the person to enjoy using clothing just for herself. Synergy (Sy) was correlated with two clothing attitudes, dressing for others and tactual pleasure. Self-acceptance (Sa) correlated with the desire to use clothing for the excitement of experimentation and with the tolerance of

ambiguity. The level of fashion innovation was positively correlated with the following clothing attitudes: dressing for self, experimentation, closure (clarity of decision), intensity (strength of feeling), and involution (degree of involvement). The correlation of closure with POI variables indicated that the more decided subjects were also more inner-directed; that is, they reacted more to themselves than to others. The distributions of innovators' and non-innovators' scores on self-actualization (POI total score) were so similar that no significant difference was found between the two groups. Although this study was unique to explore the correlation of the POI subscales to clothing variables, no causal directional relationships were investigated.

Limited research has been conducted to explore the association between clothing variables and self-actualization. The findings from the studies reviewed guide future research on the relationships of PCS and age identity with self-actualization.

Studies in Clothing and Health

Attempts to relate physical health and clothing have been limited. Research by Tims (1984) on diminishing eyesight of older women in the market place and by Feather, Kaiser, and Rucker (1988) on mastectomy patients and appearance were designed specifically to incorporate both physical health and clothing variables. Historically though, emotional health has been targeted more extensively than physical health in the clothing research literature (Callis, 1982; Compton, 1964; Dubler & Gurel, 1984; Pensiero & Adams, 1987; Watson, 1965).

Feelings of depression are known to influence the physiological health of older adults (Kline, 1974; Willits & Crider, 1988). Conversely, poor physiological health makes the older adult more susceptible to depression (Johnson, 1989) and may diminish

a person's feeling of control (Terpstra, et al., 1989). An individual's preoccupation with physical symptoms is a classic sign of depression which, if untreated, can become chronic (Kline, 1974). For this reason, Smith, Plawecki, Houser, Carr, and Plawecki (1991) believe an older adult's self-perceived health status is an important indicator as to how he or she relates to various environmental contexts.

Stone (1962) noted that a positive change in an individual's dress or appearance often accompanies a major improvement in his or her life, resulting in the overt expression of an individual's inner emotions through lack of interest in dress and appearance, including grooming when depressed (Camer, 1985). Kelly, Gray, Hildreth, Gravois, and Turner (1980) state "when appearance standards decrease among the elderly, it is often due to physical or mental health losses or lack of money" (p. 10). From a curative aspect, clothing has shown potential as a therapeutic tool to counteract depression (Dubler & Gurel, 1984) and uplift feelings of self-worth (Callis, 1982).

Interest in life has wide variability and is much greater in a person of normal health and cognitive functioning than in one who is physically ill (Cattell, 1935). Those with higher financial and health levels tend to have more interests (Longino & Crown, 1991). Likewise, passive acceptance of health problems and emphasis on one's health status encourages the likelihood of negatively self-reported health (Lohr, Essex, & Klein, 1988). A possible corresponding deduction is that individuals who are adversely preoccupied with their health or who have poor physical health will be less interested in clothing.

These conclusions seem to be supported by other researchers. Watson (1965), investigating clothing interest of women age 65 and over, found that health and clothing

interest seemed to be more negatively related for those living in private homes than in retirement homes. The researcher believed poor health kept the subjects who lived in private residences more home bound, thereby limiting their social contacts. There is a need for further investigation of the physical and emotional health of older people in relation to the human built environment including clothing and housing.

Studies in Age identity, Chronological Age, and Clothing

The literature search resulted in two age-related variables that may have an impact on successful aging through the means of clothing. Those variables are perceived age (age identity) and chronological age (Barak, 1987; Baum & Boxley, 1983; George, Mutran, & Pennybacker, 1980; Kastenbaum, et al., 1972; Linn, & Hunter, 1979; Logan, Ward, & Spitze, 1992; Steitz, & McClary, 1988; Uotinen, 1998; Westerhof, Barrett, & Steverink, 2003; Wilkes, 1992). The literature shows that older persons go through different developmental changes or transitions in different age stages and thus are not a homogenous group. This is not only because of their increasing chronological age but also because of their changing patterns of role involvement across the life span. Older persons who are young-old (65 to 74 years), old-old (75 to 84 years) and oldest-old (85 years and over) experience different life transitions because of reaching retirement age, loss of relatives, reduction of participation in social activities, or changes in physical, cognitive, mental health.

Age Identity

Being aged is unique as a social category; essentially everyone moves from not being in this group to being in it. Age identity is both ascribed and achieved; the boundaries of group membership are permeable, but defined developmentally; and influx

of new members into the aged category is certain, with numbers increasing much more rapidly than those of other minority groups with permeable boundaries. The definition of "aged" is itself flexible, both culturally and personally (Herzog & Markus, 1999; Westerhof, et al., 2003).

The biological effects of aging are accompanied by psychological and sociological changes (Botwinick, 1984), yet age may not be the best predictor of a person's behavior (Neugarten, 1980). "People resist identifying themselves as old and choose to identify with lifestyle groups rather than age groups" (Keith, 1977, p. 661). A younger self-image is most frequent in older adults who have good health (Longino & Crown, 1991; Mertz & Stephens, 1986; Smith et al., 1991). A decline in health as well as loss of physical attractiveness may cause individuals to identify themselves as old (Keith, 1977; Smith et al., 1991).

Healthy, active, and independent individuals age 55 and over, particularly those in the upper income brackets, tend to perceive themselves as younger than their chronological years (Aldred, 1973; Chowdhary, 1988; Hansan, 1987; Smith et al., 1991); many feel up to 15 years younger than their actual ages (Aldred, 1973; Chowdhary, 1988). Considerable research has been reported on age identification, i.e., perception of age, of the elderly (Baum & Boxley, 1983; Keith, 1977; Linn & Hunter, 1979).

Baum and Boxley (1983) selected 308 elderly persons (average 75.4 years) from multipurpose centers, residential treatment facilities, and the general community in order to examine how "young" older people feel and why. Feeling younger than one's age was associated with various dimensions of psychological health even when the effects of several confounding variables were statistically controlled. They found that purpose of

life is the strongest correlate of identified age and indicates the importance of maintaining meaningful existence in later years.

Persons age 65 and over, who identified themselves as feeling younger, or as old or older than their age, were studied in terms of dependent variables describing psychological functioning (Linn & Hunter, 1979). Younger age perceptions were associated with better psychological functioning in blacks and whites as well as in males and females.

Westerhof, et al. (2003) conducted a study to compare age identities of middle-aged and older-adults, age ranging from 40 to 74, in the United States and Germany. They found that Americans and Germans tend to feel younger than their actual age, the bias toward youthful identities is stronger at older ages, and persons with better health have younger identities.

The ubiquitous pattern is that the older people are, the less closely their subjective age identity matches their chronological age. The proportion of people who say they feel younger than their chronological age increased from 54% when they were in their forties, for example, to 86% when in their eighties (Goldsmith & Heiens, 1992). Similarly, as people grow older, their definition of when old age begins becomes older and older. Greater self-esteem is associated with feeling younger. Data suggest that life satisfaction is lower and stress is higher for those who see themselves as old (Logan, et al., 1992).

Another study argues that congruency between subjective and actual age leads to greater life satisfaction for older women (Montepare & Lachman, 1989). Evolving more positive conceptions of aging should lead more older people to identify as old and to have more positive self-evaluations. From this result, this researcher may expect a relationship

between age identity and self-actualization. A self-actualizing person is primarily time-competent and thus appears to live more fully in the here–and-now. Such a person is able to tie the past and the future to the present in meaningful continuity; appears to be less burdened by guilt, regret, and resentment from the past than is the non-self-actualizing person, and aspirations are tied meaningfully to present working goals (Shostrom, 1987). According to this explanation, older persons who are highly self-actualized may have a similar age identity to their chronological age; and then this similar age identity may lead to their satisfaction with life.

Age Identity, Chronological Age, and Clothing Variables

Chowdhary (2000) found that apparel significance, the extent to which apparel is considered important by an individual, was positively related to self-esteem, age perception, media usage, opinion leadership and social participation for older women and men over age 65. A person who had high self-esteem had a high level of clothing significance, and a person who perceived him/herself younger than his or her actual chronological age had a high level of clothing significance. She used one-item scale that had three response categories (i.e., younger than my age, same as my age, and older than my age) (Baum & Boxley, 1983) to measure the concept of age perception.

Wilkes (1992) examined the measurement properties of cognitive age (i.e., age identity) and its relationship both to demographic antecedent variables and to non-demographic consequential variables though the use of a structural modeling framework for 363 females aged 60 to 79. Wilkes found that cognitively younger "older" women manifested higher self-confidence and greater fashion interest, were more work oriented, and had greater participation in entertainment and culturally-related activities than

cognitively older "older" women. In addition, cognitive age is significantly and positively related to chronological age. This result also supports Barak and Rahtz's (1989) finding.

Many researchers have found chronological age to be an important factor in an individual's importance of clothing. Ryan (1953) and Snow (1969) noted that clothing interest is at a peak in the years immediately after high school and diminishes with age. Other researchers also found clothing interest scores declined as age increased, concluding that older women are less interested in clothing than younger women (Ebeling & Rosencranz, 1961; Snyder, 1966; Tyrchniewicz & Gonzales, 1978).

Conversely, women age 55 to 65 in Roudabush's (1978) study used clothing to improve appearance and maintain attractiveness. Men and women age 65 and over in Horinka's study (1975) felt that clothing was more important than in their younger years; the group age 75 and older had the highest clothing interest.

In investigating the clothing needs of the elderly, Lynn (1990) found age differences in the elderly groups with regard to the degree of PCS. The old-olds (75 and over) perceived clothing closer to the self than the young-olds (55-64). The result may suggest that old-olds have a firm self-definition and an ability to reflect or express themselves through clothing, because older persons have gone through a greater variety of life experiences. Those with limited interaction with various environments may commit themselves more closely to available objects which are located in the closest environment such as clothing. Older persons may use clothing as a tool for self-support after they lose their social interaction as a resource for enhancing their self-image.

In sum, research supports that an older person's chronological age has a positive relation to his or her age identity. An older person who perceives him/herself younger

than his/her chronological age has a high level of clothing importance and clothing interest; further this person has higher self-confidence than a person who has higher age identity. This result may suggest that an elderly person who is highly fulfilled in his or her life (i.e., self-actualized) perceives him/herself younger than his/her chronological age. When an older person ages, clothing importance and level of PCS also increases based on previous research. Clothing importance is also positively related to self-esteem, one of human needs (Chowdhary, 2000, 1991, 1990; Kaiser, 1990). An elderly individual uses clothing to meet many other needs as well. Self-actualization, the higher level need, may be met by using clothing.

Studies in Successful Aging

In U.S. society, some people think that aging and productivity are contradictory terms. In fact, many think of aging as being characterized by inevitable decline and loss of the ability to be productive. Within the category of "normal aging," Rowe and Kahn (1998) distinguish usual aging from successful aging:

> Usual aging refers to aging in which external factors heighten the effects of internal aging processes, resulting in normal decrements in functioning. Successful aging refers to aging in which external factors either have a neutral role or counteract the effects of internal aging processes resulting in little or no decrements in functioning (as cited in Kart & Kinney, 2001, p. 172-178).

The emphasis on successful aging is consistent with healthy aging defined by the World Health Organization (World Health Organization, 2000). According to the WHO, healthy aging includes physical, mental, and social well-being among the aged population. In recent studies, health has been defined as well-being in physical, cognitive, emotional, and productive aspects (Berkman et al., 1993; Glass, Seeman, Herzog, Kahn, & Berkman, 1995; Seeman et al., 1993). Although recently more and more studies have focused on

successful aging (Baltes & Batles, 1990; Vaillant & Vaillant, 1990; Wong & Watt, 1991), a few studies have investigated the factors which are associated with the multi-dimensional construct of successful aging including functional status, affective status, cognitive status, and productive involvement status (Berkman et al., 1993; Chou & Chi, 2002; Garfein & Herzog, 1995; Roos & Havens, 1991).

DeCarlo (1974) examined successful aging including cognitive, affective and sensory-motor domains, i.e., the cognitive domain corresponds to intellectual functioning, the affective domain approximates mental health, and the sensory-motor domain is related to physical health. This researcher acknowledges all multidimensional components of successful aging; however, this dissertation research is limited only to a measure of the psychological functioning component of successful aging.

Life Satisfaction

Through psychological investigations of the elderly, scientists have sought to define and measure psychological well-being. It was thought that such a measure could be used to define operationally "successful aging" (Bowling, 1997; McDowell & Newell, 1996; Neugarten, Havighurst, & Tobin, 1961, p. 134; Ryff, et al., 2001). It was thought that those who are "successfully aging" are also satisfied with life.

Neugarten, et al. (1961) had two major purposes in mind when they set out to devise a measure of "successful aging." The focus of their measure was on the individual's internal frame of reference or the individual's evaluation of his present or past life, rather than a measure of the individual's overt behavior. Yet the measure could be used to predict or study overt behavior and other psychological and social variables. The second purpose of their research was to develop an instrument that would be easy to

administer so it could be used in other studies.

Utilizing two groups of senior citizens, one group containing 103 members 50-70 years of age, the other group consisting of 74 members aged 70-90 years, Neugarten et al. (1961) conducted six rounds of interviews covering aspects of the respondents' life patterns, attitudes and values. Upon analysis the data were separated into five components including zest (vs. apathy); resolution and fortitude, or the extent to which the respondent accepts personal responsibility for his life; congruence between desired and achieved goals; positive self-concept; and mood tone. The term life satisfaction was adopted as it came closest to representing adequately the five components. From the components two rating scales were devised: Life Satisfaction Index A (LSIA), a 20 item scale for which an agree or disagree response is required; and Life Satisfaction Index B (LSIB), which consists of 17 open-ended questions and check list items to be scored on a three point-scale. However, in reviewing the literature dealing with life satisfaction the researcher noted that with the exception of research by Speitzer and Snydor (1974) a 13-item modified form of LSIA had been used in all subsequent studies to determine life satisfaction.

The LSIA first introduced by Neugarten, Havighurst, and Tobin in 1961 was reanalyzed in 1969 by Adams. Adams' purpose was to determine the reliability of the index of items, the number of factors measured by the index and the number of components represented in the index. From his study of 508 non-institutionalized elderly Adams found only two items to be unreliable. He concluded that the Life Satisfaction Index A provided a fair estimate of life satisfaction for small town and urban elderly samples.

Other writers (Wolk & Telleen, 1976; Edwards & Klemmack, 1973) have sought to discover and to examine various psychological and sociological correlates of life satisfaction. Of the correlates studied, self-perceived good health is found to be one of the most significant predictors of life satisfaction for older persons (Edwards & Klemmack; Sprietzer & Snydor, 1974). Thus the healthier one feels, the more positively he or she views life.

Previous studies have been conducted in an effort to identify variables which predict life satisfaction; however, a few studies have used measures of life satisfaction to predict other behaviors or attitudes of the elderly (e.g., clothing interest and clothing market satisfaction, clothing shopping behavior and social activity) (Joung, 2002; Bendorf, 1977).

Relationships of Life Satisfaction with Other Variables

Nussbaum (1985) studied successful aging using a conceptual model that linked background characteristics of the elderly to feelings of closeness and frequency of interaction with family and friends. Twenty items of the Life Satisfaction Index (LSIA) were used to measure the concept of successful aging. Results pointed to the importance of close friends for elderly individuals who wish to maintain high levels of life satisfaction. According to Nussbaum, the background characteristics function as a mediational component within the adaptation process of successful aging.

Five features of successful aging identified by Fisher (1995) are: interactions with others, a sense of purpose, autonomy, personal growth and self-acceptance. Older women who participated in textile handcraft guilds identified with their craft as "I", that is, expressing its importance as a process for realizing their identity, expressing their

creativity, self-directed learning, and self-actualization, as well as for its therapeutic value when under stress, its enjoyment, and the teaching opportunities it provided (Schofield-Tomschin, & Littrell, 2001). This suggests the importance of other resources, in addition to clothing, for self-realization and well-being.

Relationships between life satisfaction and individual characteristics have been well documented. Several studies have consistently found that age is negatively associated with life satisfaction (Donnenwerth, Guy, & Norvell, 1978; Palmore, 1968). Thus, as we age we often experience less satisfaction with our lives.

The research on older adults indicates that health encompasses all aspects of life. Self-reported assessments of physical health appear to be reasonably accurate (Liang, 1986; Linn, Hunter, & Linn, 1980; Maddox & Douglass, 1973; Moore, 1968; Preston, 1984; Willits & Crider, 1988; Youmans, 1974).

Perceived health status is the most significant predictor of life satisfaction of older persons (Medley, 1980; Palmore & Kivett, 1977). In a study of the comparison between black and white older female retirees' life satisfaction, Riddick and Stewart (1994) found that for both groups, life satisfaction was significantly affected by perceived health. Also, Bull and Aucion (1975) investigated a relationship between voluntary association participation and life satisfaction and found that health status was more associated with life satisfaction than participation in voluntary associations. Markides and Martin (1979) also found that health is a strong predictor of life satisfaction in the proposed path analysis model of life satisfaction from interviews with 141 persons aged 60 years and over.

Hoyt, Kaiser, Peters, and Babchuk (1980) found a negative relationship between

age identity and life satisfaction from a random sample of persons aged 65 and older in a Midwestern community of 35,000. They hypothesized that the more positive one's self-concept, the greater one's life satisfaction is likely to be. Age identification of respondent was used as the measure of self-concept. Given the negative stereotypes of old age, a self-identification as old was equated with a negative self-concept.

Montepare and Lachman (1989) examined differences in subjective age identification from adolescent to old age and the relation between subjective age and fears about one's own aging and life satisfaction. Using a questionnaire format, 188 men and women from 14 to 83 years of age made judgments about how old they felt, looked, acted, and desired to be. Respondents also answered questions about their personal fears of aging and present life satisfaction. They found that individuals in their teens held older subjective age identities, whereas during the early adult years, individuals maintained same age identities. Across the middle and later adult years, individuals reported younger age identities, and women experienced younger age identities than men across these adults years. In addition, results revealed that discrepancies between subjective and actual age were associated with personal fears of aging and life satisfaction.

According to Bendorf's (1977) study of life satisfaction, clothing interest and clothing market satisfaction among elderly women consumers, women were generally satisfied with life and concerned with their personal appearance but not as interested in experimenting with appearance. Joung (2002) designed a study to explore older female consumers' social activities, apparel shopping orientations, apparel shopping activities, and life satisfaction of older female consumers over age 55. All consumer characteristic

variables (age, education, income, health) significantly contributed to life satisfaction. Only leisure and informal social activities and fashion involvement activities (i.e., as a subset of leisure, informal social, and formal social activities) and apparel shopping orientations (i.e., fashion involvement, fashion interest, and apparel shopping enjoyment) contributed to life satisfaction. The results did not suggest a significant effect of apparel shopping activities (i.e., shopping locations, hours, or frequencies, purchase frequencies, expenditures, shopping information sources) on life satisfaction of older women.

Summary

In this chapter selected literature has been reviewed related to the variables investigated, mainly focusing on the elderly population. PCS and self-actualization have received less research focus among older persons than among adolescents or college students.

An older person's self-system is actively involved in structuring and interpreting experiences, motivating behaviors, managing emotions, and providing a sense of continuity. It is not a static part of them but an integral part of them, shaping them and, in turn, being shaped by them. Research on clothing, self-esteem, and self-concept has provided evidence of the importance of clothing in our everyday life to cope with various environments. Older people tend to reflect and communicate or express their actual and ideal images of self-concept through use of clothing. Older persons use clothing to enhance their self-esteem and to be involved with others more actively. Clothing has been used as a need satisfier to promote the appearances of older persons in maintaining self-image and in achieving the recognition and acceptance of others.

Previous research presents clear relationships of PCS with selected demographic

variables (i.e., chronological age, sex). PCS increases as chronological age increases for older persons. PCS Scale has been developed but a 6-dimensional scale has not been confirmed for use across all age ranges. It is beneficial to confirm the PCS factor structure for this elderly group and to study the relationship of other important concepts with a well confirmed PCS Scale for generating theory that explains the relation of clothing to the self.

Research also supports that an older person's chronological age has a positive relation to his or her age identity. In addition, an older person who perceives him/herself younger than his/her chronological age has a high level of clothing importance and clothing interest and further has higher self-confidence than a person who has higher age identity. This result suggests that an elderly person who is highly fulfilled in his or her life (i.e., self-actualized) perceives him/herself younger than his/her chronological age. When an older person ages, clothing importance and level of PCS also increases based on previous research. These variables are also positively related to self-esteem, one of several human needs. An elderly individual uses clothing to meet many other needs as well. Self-actualization, the higher level need, may be met by using clothing.

Self-assessed health or perceived health is found to be one of the most significant predictors of life satisfaction for older persons. Thus the healthier one feels the more positively he or she views life. The research on older adults also indicates that perceived health status is important to predict older persons' age identity and life satisfaction. Older persons who perceive themselves younger than their chronological age have more positive psychological well-being (i.e., life satisfaction).

Limited research has been conducted to explore the association between clothing

variables and self-actualization. The findings from a few studies guide future research on the relationships of PCS with self-actualization and of age identity with self-actualization. Previous research shows that evolving more positive conceptions of aging should lead older people to have more positive self-evaluations. From this result, this researcher may expect a relationship between age identity and self-actualization. A self-actualizing person is primarily time-competent and thus appears to live more fully in the here–and-now. Such a person is able to tie the past and the future to the present in meaningful continuity. According to this explanation, older persons who are highly self-actualized may have a younger or similar age identity to their chronological age.

Although limited research has been found to develop strong theoretical grounds to test the suggested conceptual model, this researcher hopes that this study leads to the development of methods to improve the older person's psychological well-being (i.e., one component of successful aging) through the medium of clothing and through improving the level of self-actualization. Behind this study is the strong belief that the findings can be utilized as a guide for improving elderly person's mental or psychological health and further as a guide for developing clothing theory in the area of human sciences.

CHAPTER III

RESEARCH METHODS

The overall purpose of this study is to contribute to theory development in the importance of clothing to the self from analysis of data and integration of two theoretical perspectives, specifically Maslow's needs satisfaction theory and human ecology theory. Secondarily, continuing to refine measures of major concepts and building directional relations among these important concepts contribute to the knowledge of how elderly individuals may age successfully.

The data utilized in this study were collected for the Michigan Agricultural Experiment Station (MAES) project MICLO 2024 entitled "Ecological Theory Construction in Clothing and the Self." Support for the project was provided by the MAES; partial support for the study reported here was from a grant awarded to the author by the College of Human Ecology and Graduate School of Michigan State University, and a Paolucci Research Grant from Kappa Omicron Nu Honor Society. This chapter presents a description of the survey research design including self-administered questionnaire development, methods for data collection, description of sample, and data analysis procedures.

Mail survey design was applied in this study and followed the guidelines of Salant and Dillman's (1994) total design method throughout the data collection with little modification of Salant and Dillman's method. A questionnaire was organized to measure variables related to self-actualization, PCS, psychological well-being, age identity, self-assessed health, and the individual's demographic information. The questionnaire was developed based on previous studies. A pilot test of the questionnaire was conducted in

an effort to develop a questionnaire that measured intended constructs and that was useful for data collection with the elderly age 65 and over. Demographic data were analyzed using descriptive statistics. An initial series of confirmatory factor analyses was used to test the measurement model for the PCS Scale, and then the structural equation model of the conceptual model was tested. Finally, relationships among each dimension of the PCS Scale, the Cognitive Age Scale, and subscales of the POI were explored using correlations.

Statement on the Use of Human Subjects

The University Committee on Research Involving Human Subjects (UCRIHS) at Michigan State University approved the procedures for protecting human subjects used by this research project [MAES project MICLO 2024 Ecological Theory Construction in Clothing and the Self in November 3, 2004 (see Appendix A)]. The UCRIHS agreed that the rights and welfare of the human subjects were protected, that the confidentiality of data from voluntary participants was assured, that any possible risks to the subjects were avoided, and that the data of this study were obtained by appropriate procedures of informed consent.

Data Collection

Pre-test

In mid-November 2004, the preliminary survey questionnaires along with a cover letter (Appendix B) were distributed to 15 elderly individuals who were age 65 and over and lived in or near the Lansing area (8 males and 7 females). Participants were asked to fill in the questionnaire as well as suggest problems regarding the survey in terms of

clarity of wording and directions for completing the questionnaire. They also were asked to indicate the approximate time spent on completing the questionnaire.

A few days later, face to face on-site visit interviews were scheduled to ask the above questions to the participants. Purposefully, half of the participants received a different title of one clothing instrument along with the separate Personal Orientation Inventory (POI). The two versions of the title were "Clothing and Human Potential: A Resource for Successful Aging?" and "Clothing and the Self in Everyday Life." This researcher asked about their interest level in these titles and requested further recommendations.

The follow-up interview questionnaire of the pre-test respondents is included in Appendix C. Suggestions were made on clarity of wording for questionnaire items, formatting of the questionnaire, and title of the questionnaire. Considering the participants' comments, finally a title of the questionnaire was decided as "Clothing: A Resource for Successful Aging?" Around 10 to 15 minutes were taken to complete the clothing instrument and around 30 to 60 minutes were taken to answer the POI. Length of the POI was somewhat of an issue; however, there was nothing that the researcher could do because this instrument was purchased and no changes could be made. The POI was administered to the survey subjects although the researcher was highly aware of this length issue.

An incentive for participation in the pre-test was awarded through a random draw from the names of respondents. The names of five persons among the 15 pre-test participants were drawn to be awarded a monetary incentive. First winner and second winner were awarded $50.00 and $20.00, respectively. Each of the next three winners

was awarded $10.00. Respondents were offered a summary of findings after data analysis was completed.

Sample

The population under this study is the elderly, males and females age 65 and above who live in non-institutional settings in the United States. Among the U.S. elderly population, the researcher hoped to obtain responses from around 500 elderly individuals (from the young-old to the oldest-old).

A random list of 1,700 elderly individuals who were aged 65 and over living in the United States including District of Columbia was generated and purchased from the Survey Sampling International company in Fairfield, Connecticut in November 2004. The source of the company's database was telephone directories, drivers' license files, and other purchased lists. Careful sampling direction was given to the sampling company to have a strong representative sampling frame to conduct a mail survey (Kish, 1995). This research used a random sampling procedure applying probability sampling, which is equal chance/probability of selection. To escape overrepresentation of one sex, weighting was applied for stratified sampling by sex (male/female).

The number of subjects needed from each sex was decided based on the 2000 Census of Population data (Bureau of the Census, 2000a), and the number of the subjects stratified by sex was decided by applying a weighting factor. Following these procedures, specific numbers of the subjects stratified by sex in the entire United States were derived and then were requested of the sampling company for people 65 and over.

According to 2000 Census data, 43% were male elderly individuals (N_M = 13,886,000) and 57% were female elderly individuals (N_F = 18,735,000) if assuming the

entire elderly population was 100% (N = 32,621,000) (Bureau of the Census, 2000a). The researcher hoped for at least 500 responses from elderly individuals. Applying the above weighting, at least 1,700 elderly individuals (969 females and 731 males) were needed under the assumption of around 85% delivery rate and 35% response rate based on communication with the survey sampling company and information from previous studies of the elderly. Table 2 presents a distribution of the sample by sex and each state that the sample represented. In addition, this table shows the entire survey sampling pool available at the sampling company.

Procedures

First mailing. The survey was initiated in the week of November 29, 2004. The following items were mailed to the 1,700 elderly individuals who were aged 65 and older: (1) a cover letter with the purpose of the study and potential implications of the survey as well as a request for participation in the survey Appendix D); (2) a lottery card for the prize drawing (Appendix E, top); (3) self-administered questionnaires [i.e., Clothing: A Resource for Successful Aging? questionnaire (Appendix F), and Personal Orientation Inventory (Appendix G) with a computer scoring sheet]; (4) a business reply envelope; and (5) No. 2 pencil. A follow-up reminder postcard was sent to all non-respondents in the week of December 27, 2004, three weeks after the initial mailing to encourage those who had not yet responded to do so (Appendix H).

The response rate was low. After subtracting out the subjects for whom an incorrect address was given, those that were returned as undeliverable by the U.S. Postal Service, and those no longer alive, the number of possible subjects was finally narrowed down to 1627. Of that number, 198 elderly individuals returned both questionnaires. The adjusted

Table 2. *Distribution of the Randomly Selected Sample Frame by Sex, State Level*

State	Selected Elderly Sample Frame			Sampling Pool at Survey Sampling International [a]
	Female ($N_F = 969$)	Male ($N_M = 731$)	Sample Totals (N = 1,700)	
AK		1	1	4,504,022
AL	16	13	29	651,277
AR	14	12	26	5,601,262
AZ	16	14	30	2,726,380
CA	62	57	119	35,669,088
CO	6	4	10	4,597,777
CT	18	10	28	3,484,919
DC	4	1	5	570,383
DE	4	4	8	817,956
FL	55	40	95	17,037,934
GA	13	7	20	8,726,467
HI	2	3	5	1,259,599
IA	19	15	34	2,941,398
ID	2	2	4	1,362,099
IL	54	44	98	12,681,208
IN	7	4	11	6,193,993
KS	12	9	21	2,941,398
KY	8	5	13	4,115,611
LA	29	20	49	4,488,721
MA	18	9	27	6,462,780
MD	25	20	45	5,529,981
ME	4	4	8	1,303,149
MI	67	50	117	10,100,223
MN	11	7	18	5,064,271
MO	10	6	16	5,706,964
MS	12	10	22	2,883,837
MT	3	3	6	912,679
NC	43	31	74	8,440,515
ND	4	3	7	630,574
NE	6	5	11	1,737,143
NH	5	4	9	1,292,509
NJ	32	22	54	8,668,499
NM	5	4	9	1,871,064
NV	4	5	9	2,251,372
NY	61	36	97	19,238,007
OH	81	59	140	11,451,544
OK	19	13	32	3,512,851
OR	9	9	18	3,566,010
PA	30	22	52	12,359,106
RI	6	5	11	1,079,239
SC	21	17	38	4,149,481
SD	3	2	5	763,827
TN	10	7	17	5,845,291

Table 2. (cont.)

State	Selected Elderly Sample Frame			Sampling Pool at Survey Sampling International [a]
	Female (N_F = 969)	Male (N_M = 731)	Sample Totals (N = 1,700)	
TX	46	32	78	22,192,367
UT	6	6	12	2,353,183
VA	27	22	49	7,384,910
VT	1	1	2	620,043
WA	19	16	35	6,146,717
WI	32	28	60	5,475,649
WV	8	7	15	1,799,004
WY	0	1	1	500,890

Note. This sampling list was generated and purchased from the Survey Sampling International company in Fairfield, Connecticut in November 2004.

[a] The numbers in this column represent all ages, not just those aged 65 and over.

response rate was 12.17 percent.

Second mailing. Finally, the second mailing, which included a cover letter (Appendix I), a lottery card (Appendix E, bottom), a self-administered questionnaire including only the clothing questionnaire (Appendix F), and a business reply envelope was sent to 600 randomly selected elderly individuals who did not respond by January 17, 2005, the sixth week from the first mailing. The researcher selected 600 elderly individuals from the 1,429 remaining available sample list using a random numbers table (Raj, 1972, pp. 364-368). The researcher would have liked to include all the remaining elderly individuals in the second mailing; however, it was not feasible because of the budget limit. The researcher received an adequate number of respondents from the first mailing who completed the POI to run the SEM test. Due to costs for purchasing additional POI and length to complete, a decision was made to send only the clothing questionnaire in the second mailing. More respondents for PCS confirmatory factor analysis were needed.

A second survey mailing list was generated from the original sampling frame including 342 females and 258 males that applied the same rule of 43% male and 57% female proportional to the elderly population in the United States. In January 24, 2005, the survey was sent out and then 55 elderly individuals completed and returned the questionnaire within two weeks. The adjusted response rate combining the responses from the first and second mailings was 15.55 percent. The response rate, despite the incentives, was still low and didn't meet the researcher's projection of a 35 percent response rate.

The data of survey respondents from both mailings ($N_{1+2} = 250$) were used for the confirmatory factor analyses of the PCS Scale, and only the data from the first survey respondents ($N_1 = 198$) were used for the SEM analysis to test the conceptual model and the correlation analysis in this study.

The incentive for participation was awarded through a random draw from the names of respondents. As an incentive to answer the survey, the names of eight persons among the respondents were drawn and awarded a monetary incentive when the data collection was completed. Following a designated period of time following the mailing of the follow-up post card, a first winner, second winner, and third winner were awarded $100.00, $50.00, and $25.00, respectively. Five more winners following the first three winners were awarded $10.00. Similarly, the names of five persons among the respondents to the second mailing were drawn and awarded a monetary incentive when the data collection was completed. First winner and second winner were awarded $50.00 and $20.00, respectively. Each of the next three winners was awarded $10.00. All respondents were offered a summary of findings and a thank-you letter after data analysis

was completed; they indicated their willingness to receive the summary of findings at the bottom of the first instrument.

Instrumentation

The questionnaire contained items that were intended to measure the five constructs (age identity, PCS, self-actualization, self-assessed health, psychological well-being) and elderly individuals' characteristics (i.e., age, sex, educational attainment, income, and ethnicity). For the first mailing, two different questionnaires were sent to each person: one, *Clothing: A Resource for Successful Aging?*, included questions related to Proximity of Clothing to Self, age identity, self-assessed health, psychological well-being, and individual's background information (Appendix F). The other was a *Personal Orientation Inventory* packet which was the measure of self-actualization purchased from the Educational and Industrial Testing Service (EdITS) (Appendix G). After sending a follow-up reminder postcard, a second mail survey including only *Clothing: A Resource for Successful Aging?* questionnaire was sent.

Proximity of Clothing to Self (PCS) Scale

In a recent study, Sontag and Lee (2004) proposed six dimensions of PCS including clothing in relation to: (1) self as structure; (2) self as process – communication of self to others; (3) self as process – response to judgments of others; (4) self-esteem – evaluative process dominant; (5) self-esteem – affective process dominant; and (6) body image and body cathexis.

For this study, a total of 40 statements reflective of the six PCS dimensions was used to measure the level of PCS. Sontag and Lee (2004) recommended beginning with the set of 39 items that were retained at the conclusion of single factor analysis for each

dimension using a structural equation modeling approach with adolescents; they also recommended adding an item with alternative wording ("What I wear is who I am") for item PCSD105 ("What I wear is consistent with who I am"). The 6-point Likert type response scale for measuring PCS has the following descriptors: 1 = *Never or almost never true of me*, 2 = *Usually not true of me*, 3 = *Sometimes true of me*, 4 = *Often true of me*, 5 = *Usually true of me*, 6 = *Always or almost always true of me*. High scores represent high PCS; low scores represent low PCS. Construct reliabilities of the six PCS dimensions reported in the Sontag and Lee study were high, ranging from .78 to .88, but only four dimensions were validated for the adolescent group. More discussion of the four dimensions of PCS Scale was presented under the heading of studies in proximity of clothing to self in Chapter II.

This researcher and the project director used a multi-step procedure for randomizing the 40 items within the PCS instrument (7 items including alternatively worded item for dimension 1, 7 items for dimension 2, 4 items for dimension 3, 8 items for dimension 4, 7 items for dimension 5, and 7 items for dimension 6). First, the order of six dimensions was randomly selected for the first set of items. Then one item was randomly selected from the first selected dimension, the next item was randomly selected from the second selected dimension, and we continued in this way to select an item from each subsequent dimension. This procedure was repeated with the additional rule imposed that two items from a single dimension would not be placed in sequence. The items were randomly selected without replacement from each of the dimensions, and the order of dimensions varied across each set of items. The PCS Scale is in Appendix F, pp. 1-2 of the questionnaire, *Clothing: A Resource for Successful Aging?*

Psychological Well-being

The second section of the questionnaire involves one measure of the construct "psychological well-being." The term "life satisfaction" was used as reference to the concept of psychological well-being (Neugarten, et al., 1961). Such a measure has been used to define operationally "successful aging" (Neugarten, et al., p.134).

The life satisfaction questions were adopted from an existing scale, "Life Satisfaction Index A," originally developed by Neugarten, et al. (1961) and modified by Adams (1969). Adams' modified Life Satisfaction Index A (LSIA), consisting of 18 items, has a reported reliability coefficient of .84 (Wolk & Kurtz, 1975). Wood et al. (1969) derived a 13-item version of Scale A, known as LSIZ, which is probably the most popular, and applications are numerous. The refined 13-item version of the Index (LSIZ) shows a split-half reliability of .79. Edwards and Klemmack (1973) reported an internal consistency reliability coefficient of .90. As it was developed for use with older people, this researcher believes that it is appropriate for use with the population in this study.

The 13-items are included for the current investigation and measured by a 5-point Likert-type scale, ranging from "1" as *Strongly Disagree* to "5" as *Strongly Agree.* Participants were asked to read statements regarding life in general and indicate an appropriate number that matched their level of agreement on the scale. Higher scores represent high levels of life satisfaction, while low scores represent low levels of life satisfaction. Five items among 13 items were reverse-coded. Those include item numbers 3, 4, 5, 11, and 12. The Life Satisfaction Index (LSIZ) is in Appendix F, p. 3 of the questionnaire, *Clothing: A Resource for Successful Aging?*

Self-assessed Health

The third section consists of questions about the status of the elderly individual's health. Subjective health measures (how an individual feels about his/her health) have been used by most researchers to measure perceptions of health. These have been found to be as accurate as objective measures (a physician's analysis) in determining health status (Linn, Hunter, & Linn, 1980; Maddox & Douglass, 1973; Moore, 1968; Preston, 1984). Maddox and Douglass (1973), in a 15 year study, found that self-reports of health reflect actual health and are useful in surveys.

Self-assessed health status is measured by two statements, which were developed by Passman (1995). The first statement asks the participants to rate their current overall health on an 11-point scale, ranging from "0" as *Very Poor* to "10" as *Excellent Health.* Higher scores indicate greater perceived health and lower scores indicate lower perceived health. The second statement asks respondents to check in the bracket next to the frequency that applies to them about how many times they have been sick or they were unable to carry out usual activities during the last six months, using a 5-point response scale with "5" as *None*, "4" as *Once*, "3" as *Less than 5 times*, "2" as *5 to 10 items*, and "1" as *Over 10 Times*. Higher numbers indicate greater perceived health of the respondent. Values of the second question were transformed to the same scale range as the first health question, and then values of the two scale items were summed and averaged to construct an index of participants' self-assessment of health status. The correlation between the two health statements was .456 ($p < .01$). The self-assessed health questions are in Appendix F, p. 4, top of the questionnaire, *Clothing: A Resource for Successful Aging?*

Age Identity

Age identity refers to labels that reflect how old or young individuals perceive themselves to be. It implies a relationship between individuals and the age group with which they feel an affinity either directly by age or indirectly through shared characteristics (Logan, Ward, & Spitze, 1992; Steitz & McClary, 1988).

Cognitive Age Scale (Barak, 1987; Kastenbaum et al., 1972) is used to measure the concept of age identity. Cognitive Age Scale is numerical, expressed in years, and measures subjectively-experienced age roles in terms of personal age dimensions related to functional areas of the self: psychological (Feel/Age), physical (Look/Age), social/occupational (Do/Age), and intellectual (Interest/Age).

Although multidimensional, Cognitive Age is a fairly simple survey scale to administer (Barak, 1987). Each respondent is asked to rate his/her self-perceived age status by specifying the absolute chronological age that most closely matches the way he/she feels, looks, acts, and thinks. The scoring of the scale used a decade-matching format (i.e., 20s, 30s, 40s, 50s, 60s, 70s, 80s, 90s). The Cognitive Age Scale is in Appendix F, p. 4 of the questionnaire, Clothing: A Resource for Successful Aging?

Self-actualization (SA)

The Personal Orientation Inventory (POI) is the only instrument published which claims to measure self-actualization (Shostrom, 1987). It is authored by Everett L. Shostrom and published by the Educational and Industrial Testing Service of San Diego. Because the POI is copyrighted and only available for purchase, Appendix G only refers to where the instrument can be purchased.

Consisting of 150 two-choice comparative value judgments, the test measures 12 elements of self-actualization. All items are to be scored twice: first, for the two basic

scales of time-competence (23 items) and inner-directedness (127 items); and second, for the 10 subscales. These scales are presented below.

Two major scales of the POI are:

1. Time-competence/Time-incompetence (T_C; 23 items) measures "the degree to which one is 'present' oriented;"

   > A high score measures the ability to tie the past and the future to the present in meaningful continuity. A low score indicates that one is excessively concerned with the past or the future relative to the present (p. 13).

2. Other/Inner Support (I; 127 items) measures "whether reactivity orientation is basically toward others or self;"

   > A high score measures the ability to go through life apparently independent. A low score indicates that one becomes over-sensitive to others (p. 15).

Ten subscales of the POI are:

1. Self-actualizing Value (SAV; 26 items) measures "affirmation of primary value of self-actualizing persons;"

   > SAV was derived from Maslow's concept of self-actualizing people. A high score suggests that the individual holds and lives by values of self-actualizing people, and a low score suggests the rejection of values of self-actualizing people. Items in this scale cut across many characteristics but a representative SAV item stem is, "I live in terms of my wants, likes, dislikes, and values (p. 17)."

2. Existentiality (Ex; 32 items) measures "ability to situationally or existentially react without rigid adherence to principles;

   > ...the Existentiality scale measures one's flexibility in applying such values or principles to one's life. It is a measure of one's ability to use good judgment in applying these general principles. Higher scores reflect flexibility in application of values. People who get low scores tend to hold values so rigidly that they may become compulsive or dogmatic (p. 17).

3. Feeling Reactivity (Fr; 23 items) measures "sensitivity of responsiveness to one's own needs and feelings;"

A high score measures sensitivity to one's own needs and feelings. A low score shows insensitivity to one's own needs and feelings (p. 17).

4. Spontaneity (S; 18 items) measures "freedom to react spontaneously or to be oneself;"

   A high score measures the ability to express feelings in spontaneous action. A low score indicates that one is fearful of expressing feelings behaviorally (p. 17).

5. Self-Regard (Sr; 16 items) measures "affirmation of self because of worth or strength;"

   A high score measures the ability to like one's self because of one's strength as a person. A low score indicates low self-worth (p. 17).

6. Self-Acceptance (Sa; 26 items) measures "affirmation or acceptance of self in spite of weaknesses or deficiencies;"

   A high score measures acceptance of one's self in spite of one's weaknesses or deficiencies. A low score indicates inability to accept one's weaknesses (p. 18).

7. Nature of Man (Nc; 16 items) measures "degree of the constructive view of the nature of man, masculinity, femininity;"

   A high score means that one sees man as essentially good. He can resolve the goodness-evil, masculine-feminine, selfishness-unselfishness and spirituality-sensuality dichotomies in the nature of man. A high score, therefore, measures the self-actualizing ability to be synergic in understanding of human nature. A low score means that one sees man as essentially evil or bad and is not synergistic (p. 18).

8. Synergy (Sy; 9 items) measures "ability to be synergistic, to transcend dichotomies;"

   A high score is a measure of the ability to see opposites of life as meaningfully related. A low score means that one sees opposites of life as antagonistic. When one is synergistic one sees that work and play are not different, that lust and love, selfishness and unselfishness, and other dichotomies are not really opposites at all (p. 18).

9. Acceptance of Aggression (A; 25 items) measures "ability to accept one's natural aggressiveness as opposed to defensiveness, denial, and repression of aggression;'

> A high score measures the ability to accept anger or aggression within one's self as natural. A low score means that one denies having such feelings (p. 18).

10. Capacity for Intimate Contact (C; 28 items) measures "ability to develop contactful intimate relationships with other human beings, unencumbered by expectations and obligations."

> A high score measures the person's ability to develop meaningful, contactful, relationships with other human beings. A low score means one has difficulty with warm inter-personal relationships. Making contact may be defined as the ability to develop and maintain an "I-Thou" relationship in the here-and-now and the ability to meaningfully touch another human being. . . . the climate to establish good contact is best when the individual does not over-respond to, nor does he utilize, inter-personal demand expectations and obligations. Other measured dimensions which facilitate contact are the ability to express vs. impress, being vs. pleasing, and the ability to relate intensely to another person either aggressively or tenderly (p. 18).

The two major scales (i.e., T_C and I) use every item once, with a total of 150 items. Each item consists of two choices. The "incorrect" choices for the time-competent scale are categorized under time-incompetent. The "incorrect" choices for the inner-directed scale are categorized under other-directed scale. Ratio scores can be computed from time-incompetent – time-competent scores and from other-directed – inner-directed scores (Shostrom, 1987). Ratio scores were not used for this study.

The ten subscales are formed by using some of the 150 items more than once. If the scores on each of the 10 subscales are added together there is a total score of 219, indicating that a considerable number of items are used more than once in the ten sub-scales. A profile sheet for the POI scales and sub-scales has been established from adult norms. According to the POI manual (Shostrom, 1987), the score profile is particularly useful in the therapeutic situation as an aid in interpreting an individual's score results according to established norms with a mean of fifty and a standard deviation of ten points.

Therefore, scores one standard deviation on either side of the mean describe the average population; deviation greater than this band becomes highly significant.

In research work, ". . . for correlational or statistical analysis . . . ," the POI manual recommends that the time-competent (T_C) and inner-directed (I) scales be used. The time-competent and inner-directed scales are the two major POI scales. Damm (1969) states that ". . . an overall measure of the POI can probably be best obtained by . . . , combining the raw scores of the I and T_C scales (p. 981)."

In this study, combining the raw scores of the two major scales was used for the structural equation model test. The other 10 subscales along with two major scales (i.e., T_C and I) were used for exploratory correlation analysis with other major constructs in this study.

Validity. The results of a study by Shostrom (1987) indicate that the Personal Orientation Inventory (POI) ". . . discriminates between clinically judged self-actualized and non-self-actualized groups on 11 of the 12 scales." Shostrom reports the validity of the two major scales and eight of the subscales as significant at the .01 level, one subscale, Feeling Reactivity, at the .05 level and one subscale, Nature of Man, as not significant.

Reliability. Test re-test reliability studies done by Shostrom with a group of forty-eight college students yielded correlation coefficients ranging from .52 to .82 for each of the ten subscales and .71 and .77 respectively for the T_C and I scales (Shostrom, 1964). The reliability coefficient for these combined scales has not been determined in previous research studies although the scores on the two major scales of time-competence and inner-direction have been combined in several research studies.

Personal Background Information

The fifth section is designed to collect general, descriptive background information about the respondents. The questions include age, sex, marital status, ethnicity or race, annual household income before taxes, the highest level of education received, present and former occupation, and present occupational status (See Appendix F, pp. 4-5 of the questionnaire, *Clothing: A Resource for Successful Aging?*). Sex, marital status, ethnicity, and annual household incomes are measured by selection of closed-ended categorical responses. Sex was treated as a dichotomous variable: "1" for *male*, and "2" for *female*. For age, respondents were asked to answer the question, "In what year were you born?" The researcher entered the age data which were the subtraction of their year of birth from the year 2005 (e.g., 2005 – 1920 = 85). Age was scored as a continuous variable. The highest level of education received was measured by selection of continuous format responses.

Categories of ethnicity or race in this study were developed based on how the Census defined the race (or ethnicity) categories (Bureau of the Census, 2000b). Starting with Census 2000, the Office of Management and Budget (OMB) required federal agencies to use a minimum of five race categories: (1) White; (2) Black or African American; (3) American Indian or Alaska Native; (4) Asian; and (5) Native Hawaiian or Other Pacific Islander. For respondents unable to identify with any of these five categories, the OMB approved including a sixth category – "some other race" – on the Census 2000 questionnaire. The OMB defines Hispanic or Latino as "a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race" (p. 2). Federal agencies are required to use a minimum of two ethnicities: "Hispanic or Latino" and "Not Hispanic or Latino."

Respondents were asked to indicate their present occupational status and could check one or more than one category. The choices were employed full-time, employed part-time, temporarily unemployed, retired, unemployed, looking for job, full-time volunteer work, part-time volunteer work, and other. Present and former occupation is measured by responses to an open-ended question, "what is/was your most recent job title or occupation in paid work?" After respondents completed the survey, this researcher coded their described occupations under one of the occupation categories that were the same as the Census occupation categories (Bureau of the Census, 2003). The categories are as follows: (1) management, professional, and related occupations, (2) service occupations, (3) sales and office occupations, (4) farming, fishing, and forestry occupations, (5) construction, extraction, and maintenance occupations, and (6) production, transportation, and material moving occupations. Table 3 presents more detailed occupation classifications.

Finally, to provide clear understanding of the survey participant's closed-ended responses on most of the variables, one open-ended question, "In your own words, how does clothing help you through the aging process?" was included. This question was not analyzed in this dissertation, but is the subject of a future report.

Data Analysis Procedures

Data analysis was conducted in various steps based on the objectives of this study: descriptive analysis, confirmatory factor analyses of PCS Scale, structural model test for important theoretical predictors of successful aging, and correlation analysis among PCS sub-dimensions, subscales of the Personal Orientation Inventory, and Cognitive Age Scale items. The *Statistical Package for the Social Sciences* (SPSS Version 12.0)

software and *Amos 5.0* were employed to conduct statistical analysis and model testing.

Table 3. *Selected Occupational Groups and Subgroups for the United States: 2000*

Occupational groups and subgroups
Management, professional, and related occupations
- Management, business, and financial operations occupations
- Professional and related occupations
Service occupations
- Healthcare support occupations
- Protective service occupations
- Food preparation and serving related occupations
- Building and grounds cleaning and maintenance occupations
- Personal care and service occupations
Sales and office occupations
- Sales and related occupations
- Office and administrative support occupations
Construction, extraction, and maintenance occupations
- Construction and extraction occupations
- Installation, maintenance, and repair occupations
Production, transportation, and material moving occupations
- Production occupations
- Transportation and material moving occupations

Source. Bureau of the Census (2003).

Treatment of Missing Data

In reality, not all respondents in the surveys responded to all of the items in the questionnaires. Treatment of missing data was as follows:

1. Overall, incomplete questionnaires which were returned from the respondents were deleted from the analysis. Six respondents were dropped.
2. Listwise deletion was applied to run a confirmatory factor analysis of PCS Scale. If the respondent failed to answer any of the 40 PCS items, he or she was deleted from the analysis. The missing data method was applied to three respondents who failed to

answer items on PCS subscales.

3. To run the structural equation model test, the following missing data methods were used. Only the respondents from the first mailing survey ($N_1 = 195$) were applicable in this analysis.
   - If, on the POI, the respondent failed to answer either of Time-Competent scale items or Inner-Directed scale items, he or she was deleted from the analysis because self-actualization was a combined score of these two scale scores. The missing data method was applied to three respondents who failed to fill in POI completely. These three respondents were included for the PCS confirmatory factor analysis.
   - If, on any item of age identity (4 items) and psychological well-being (13 items), the respondent failed to answer one item, the mean of the three items and 12 items on the factors, respectively, which were answered by the respondent was assigned to the unanswered item. This missing data method was applied to two respondents who failed to answer items on age identity. There was no missing data on psychological well-being.
   - Missing data on various demographic variables were not a major problem to test the structural model.
   - One respondent didn't indicate his age in spite of completing the questionnaire; however, this researcher included this person in the CFA analysis of the PCS Scale since the researcher specified the age range, aged 65 and over, when ordering the sample list from the survey sampling company, and actual chronological age was not needed in the CFA analysis. This person was not

included for SEM and correlation analyses.

After these deletions, $N_{1+2} = 250$ was used for research objective 1, the confirmatory factor analyses (CFA) of PCS Scale, and $N_1 = 195$ for research objectives 2 and 3, SEM analysis and correlation analysis, respectively.

Descriptive Analysis

Descriptive statistics were calculated to describe the sample. Frequency distributions of age, sex, marital status, ethnicity, annual household income, education level, and present occupational status were analyzed. This analysis indicates whether the sample is normally distributed and is representative of the elderly population in the United States. The descriptive statistics are presented for 250 elderly respondents for research objective 1, the confirmatory factor analyses (CFA) of PCS Scale, and for 195 respondents for research objectives 2 and 3, SEM analysis for conceptual model testing and correlation analysis, respectively. Comparisons of characteristics of the sample of this study with the U.S. elderly population are presented.

Means and standard deviations of total scores on each of the six subscales of the PCS Scale for 250 respondents before confirming the PCS factor structure are also reported under the title of descriptive analysis. Means and standard deviations of total scores on confirmed PCS subscales for both 250 respondents and 195 respondents after completing the PCS confirmatory factor analysis, and means and standard deviations of total scores on self-actualization and age identity for 195 respondents are reported under the title of summary statistics for the variables included in the structural equation modeling section of Chapter IV. One-way analysis of variance (ANOVA) and Scheffé post hoc comparisons were used to test significant differences across different age

categories for PCS, age identity, and self-actualization. One-way analysis of variance (ANOVA) and Scheffé post hoc comparisons were also used to test for significant differences in the means for all female and male respondents. Paired-samples t-tests were used to test significant differences across different PCS subscales and different Cognitive Age Scale items within a specific age category and sex category.

Confirmatory Factor Analysis of the PCS Scale

Confirmatory factor analysis (CFA) using the structural equation modeling (SEM) approach (Hoyle, 1995) was used to test the construct validity of the PCS Scale for use with elderly individuals. In contrast to exploratory factor analysis (EFA), CFA is appropriate to use when a researcher has theoretical knowledge about the underlying latent variable structure based on prior empirical evidence such that a model is proposed for the relationships among latent variables, observed variables, and disturbance or error terms (Bollen, 1989). If CFA is used and the results do not support the model, it is normal and acceptable practice to revise the model to obtain better fit (Joreskog, 1993).

Sontag and Lee (2004) used three analytical rounds of CFA to test the construct validity of the PCS Scale with adolescents. The measurement model was tested separately for each factor in round one. In round two, a factor model for factors taken two at a time for those that theoretically were expected to correlate substantially was tested. Then, in round three a full factor measurement model for correlations among factors was tested, and a higher-order factor model was tested to examine the relationship between PCS (second-order factor) and each of the PCS dimensions (first-order factors).
The same procedure described above was used to test the 6-factor model of the PCS Scale for use with this elderly group using *AMOS 5.0* (Analysis of Moment Structures)

which is one of several SEM software programs. Figure 3 presents the comparison of CFA procedure of PCS Scale between Sontag and Lee's 2004 research on an adolescent group and this current research on an elderly group. Sontag and Lee (2004) originally proposed a 6-factor PCS scale but this was not confirmed for adolescents. A four-factor model with 24 items resulted for this group. Following their recommendation, the 6-factor model including a total of 40 items was tested using SEM. Non-performing items were deleted. When the 6-factor model didn't hold, a 3-factor model was tested to determine the best structure for this elderly group. After confirming the factor structure, this scale was used for further model testing. The 6-factor model of PCS Scale is shown in Figure 4.

The following description of analysis procedures is based on that given in Sontag and Lee's (2004) study. Several fit statistics were used to evaluate the hypothesized model. An overall measure of model fit is the chi-square (χ^2) test of the null hypothesis that the population covariance of the observed variables is the same as that implied by the hypothesized model. Thus, the researcher hopes not to reject the null hypothesis; a nonsignificant χ^2 statistic supports this result. "The higher the probability of the χ^2, the closer is the fit of H_0 to the perfect fit" (Bollen, 1989, p. 266).

When the distribution of observed variables is not multivariate normal, especially with respect to kurtosis (DeCarlo, 1997), the obtained value of χ^2 is inaccurate, often inflated, and the probability levels are lower than is actually correct. Mardia's test for multivariate kurtosis was used in this study (Arbuckle & Wothke, 1999; Mardia, 1982; Mardia & Foster, 1983) to assess the normality of the 40 observed PCS variables. In general, the data violated the distributional assumption of multivariate normality. To the

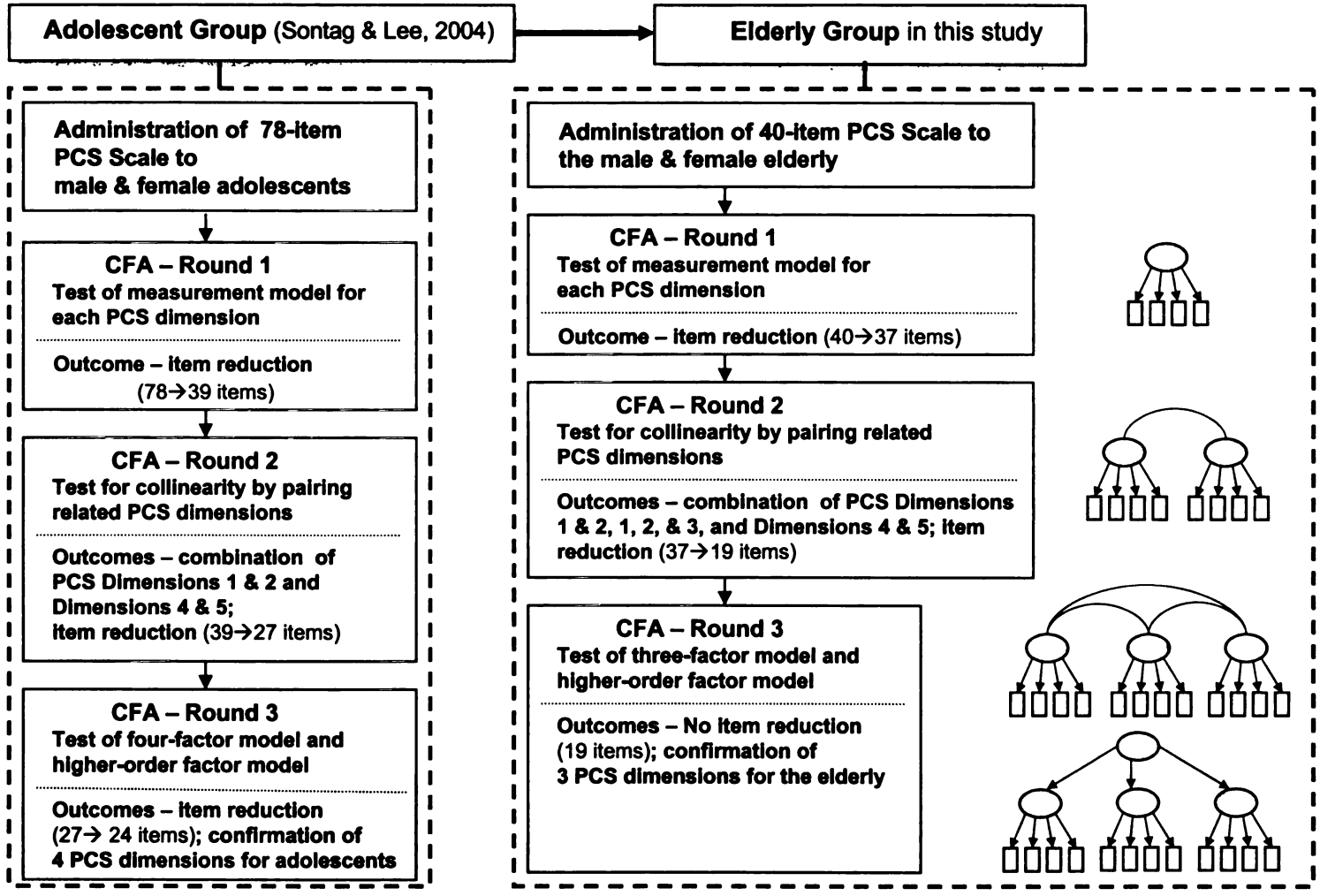


Figure 3. Comparison of confirmatory factor analysis procedure between adolescent and elderly groups.

Note. The number of rectangles in the schematic diagram is not necessarily representative of the number of observed variables. Adopted from Sontag and Lee (2004).

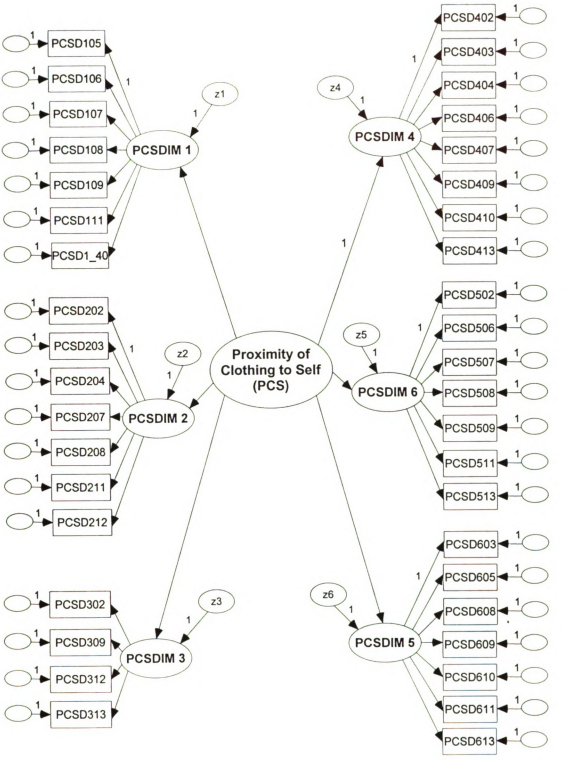


Figure 4. The 6-factor model of PCS Scale for the confirmatory factor analysis.

Note. Oval directed to each of the latent constructs represents the measurement error of the indicator. Oval directed to PCS dimensions represents the disturbances.

chi-square statistic, i.e., the Bollen-Stine bootstrapped *p* (Bollen & Stine, 1993). Bootstrapping is a resampling procedure of the sample data which is assumed to represent the population. One thousand subsamples of the same size as the parent sample ($N_{1+2} = 250$) were drawn randomly *with replacement.* This procedure provides an empirical investigation of the variability of parameter estimates (e.g., factor loadings) and correct for this, bootstrapping was used to obtain a corrected value of the probability for indexes of fit such as chi-square (Byrne, 2001).

Another corrective procedure for nonnormality is to compare the results of various estimators or to use estimators which do not rely on the distributional assumption of multivariate normality. In this study, results from both maximum likelihood (ML) and unweighted least squares (ULS) estimators are reported. The measure of overall fit obtained with the ULS estimator is a discrepancy function; the smaller this function, the better the fit (Bollen, 1989). The Bollen-Stine bootstrapped *p* was used to evaluate the nonsignificance of the discrepancy function with high probabilities desirable in order not to reject the null hypothesis.

The chi-square test is a measure of exact fit and is sensitive to sample size. Because of this the chi-square statistic tends to be large when sample size is large and leads to over-rejection of the null-hypothesis. Other measures of model fit address the limitations of the chi-square test. Some fit indexes are not applicable to the ULS estimator.

With respect to individual parameters (e.g., factor loadings for observed variables), a measure of component fit is the *squared multiple correlation coefficient* (R^2). R^2 is a reliability estimate that measures the proportion of variance in a *single* PCS item

that is explained by the latent variable, i.e., the PCS factor in this study. The smaller the error variance is relative to the variance of the observed variable, the higher will be the R^2. Construct reliability of each subscale of PCS was computed by the method in Hair, Anderson, Tatham, and Black (1995, pp. 642, 653). The procedure of calculation is illustrated below:

$$\text{Construct Reliability} = \frac{(\text{Sum of standardized loadings})^2}{(\text{Sum of standardized loadings})^2 + \text{sum of indicator measurement error}}$$

Structural Model Testing and Hypotheses

To develop and test a conceptual model that explains how elderly individuals may age successfully by fulfilling the need for self-actualization by incorporating a primary resource environment, i.e., clothing, into their self-system, the following hypotheses are proposed for this study. Figure 5 shows the hypothesized relationships among the variables.

Based on the theoretical framework previously described in Chapter I, the specific hypotheses to be investigated relative to elderly individuals are presented. The first set of hypotheses examines the effect of three exogenous variables (age, sex, and self-assessed health) on one endogenous variable (Proximity of Clothing to Self), as well as the relationships among all the endogenous, intervening variables. They are stated as:

> Hypothesis 1a: Age has a positive, direct impact on proximity of clothing to self of older persons.
>
> Hypothesis 1b: Sex has a direct impact on proximity of clothing to self of older persons. (I.e., Females will have higher PCS than males).
>
> Hypothesis 2: Age has a positive, direct impact on age identity of older persons.

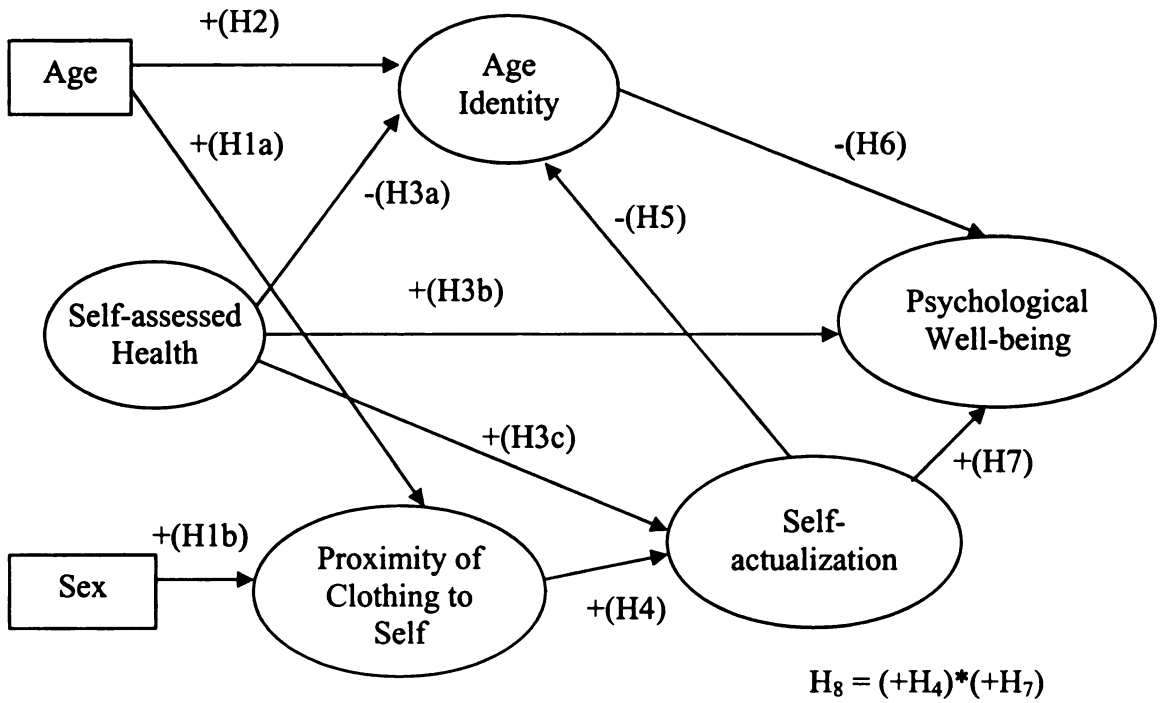


Figure 5. Hypothesized model for this study.

Hypothesis 3a: Self-assessed health has a negative, direct impact on age identity of older persons.

Hypothesis 3b: Self-assessed health has a positive, direct impact on psychological well-being of older persons.

Hypothesis 3c: Self-assessed health has a positive, direct impact on self-actualization of older persons.

Hypothesis 4: Proximity of clothing to self has a positive, direct impact on self-actualization of older persons.

Hypothesis 5: Self-actualization has a negative, direct impact on age identity of older persons.

The second set of hypotheses is intended to examine the effect of three endogenous variables on psychological well-being.

Hypothesis 6: Age identity has a negative, direct impact on psychological well-being of older persons.

Hypothesis 7: Self-actualization has a positive, direct impact on psychological well-being of older persons.

Hypothesis 8: PCS has a positive, indirect impact on psychological well-being mediated by the self-actualization of older persons.

The last hypothesis proposed examines the overall explanatory power of the structural model for older person's successful aging, integrating all the variables selected for this study. It is stated as follows:

Hypothesis 9: Among older persons who are age 65 and over, the levels of influence of the independent variables and the intervening variables are predictive of the level of psychological well-being.

The data in this part of the research were analyzed in two steps that utilize maximum likelihood estimation with bootstrapping. First, the measurement model was evaluated. Reliability, unidimensionality, and discriminant validity (the distinctiveness of the factors measured by different sets of indicators) were tested (Kline, 1998). After the measurement model was evaluated, the second step was an examination of the structural equation model. The structural equation model in this study was a recursive model that had only unidirectional paths and no feedback loops in the measurement model and structural model. There were five unobserved latent variables called "PCS," "age identity," "self-actualization," "self-assessed health," and "psychological well-being." "Self-assessed health" and "self-actualization" were treated as observed variables because each has one indicator. In this structural model, age and sex were assumed to be uncorrelated. Also, there was assumed to be no covariance between the disturbances of endogenous variables.

Using ML estimation with bootstrapping, one way to correct for multivariate kurtosis, to test overall fit of the model, the chi-square fit test, the goodness of fit index

(GFI), adjusted goodness of fit index (AGFI), normed fit index (NFI), relative fit index (RFI), incremental fit index (IFI), and root mean square error of approximation (RMSEA), were used. Modification indices were carefully examined to improve the model fit. Although these modification indices might suggest additional paths and several covariances between disturbances, the model was not to be modified if these suggestions were not consistent with the proposed substantive theory. The standardized residual covariance matrix was carefully examined as well. In addition, to test the hypotheses, the statistical significance of path coefficients and covariances were examined as well as variances of the endogenous variables.

Correlation Analysis: Exploratory Research

Further examination was conducted to explore correlations between each of the three confirmed dimensions of the PCS Scale and the two major scales and 10 subscales of a measure of self-actualization, correlations between each of the three confirmed dimensions of the PCS Scale and each item of the Cognitive Age Scale, and correlations between each item of the Cognitive Age Scale and the two major scales and 10 subscales from the measure of self-actualization. In the SEM model analysis, this researcher investigated only direct impacts of PCS on overall self-actualization and overall self-actualization on age identity. No relationships among each dimension of PCS with overall self-actualization or each subscale of self-actualization were completed in the SEM model testing.

Exploring correlations among these variables provided some idea about which dimension of PCS was highly related with specific subscales of self-actualization. This exploration will be beneficial for further theoretical development. The two major scales

(T_C and I) and the following 10 subscales of POI were used for correlation analyses: self-actualizing values (SAV), existentiality (Ex), feeling reactivity (Fr), spontaneity (S), self-regard (Sr), self-acceptance (Sa), nature of man (Nc), synergy (Sy), acceptance of aggression (A), and capacity for intimate contact (C).

It is interesting to explore the relationship between age identity and the time-competent scale of POI. A self-actualizing person is primarily time-competent and thus appears to live more fully in the here–and-now. Such a person is able to tie the past and the future to the present in meaningful continuity; appears to be less burdened by guilt, regrets, and resentments from the past than is the non-self-actualizing person, and aspirations are tied meaningfully to present working goals (Shostrom, 1987). According to this explanation, older persons who are highly self-actualized may have a similar age identity to their chronological age and then this similar age identity may contribute to their satisfaction with life. In contrast, much previous research shows that older persons who perceive themselves younger than their chronological age have higher life satisfaction and age more successfully than the persons who perceive themselves older than their chronological age. Further correlation analysis of age identity with other subscales of the POI was done. In sum, exploring these relationships was worthwhile for future research and theory construction. A summary of the three research objectives and subjects, data, and statistics used in this study is found in Table 4.

Table 4. *Methods Used for Analyses of Data*

Purpose of Analysis	Subjects Used in Analysis	Data Used in Analysis	Statistics
Demographic description	250 respondents (from both first and second mailing); and 195 respondents (from the first mailing)	Variables about personal demographic information	Frequencies and percentages - by sex - by age categories Descriptive statistics (mean and standard deviation) - PCS Scale dimensions - Cognitive Age Scale - Life Satisfaction Index
Research Objective 1: CFA of the PCS Scale	250 respondents (from both first and second mailing)	40 PCS Scale items in *Clothing: A Resource for Successful Aging?* questionnaire	Confirmatory Factor Analysis using *AMOS 5.0*
Research Objective 2: Model test	195 respondents (from the first mailing)	*Clothing: A Resource for Successful Aging?* questionnaire - Age; sex; self-assessed health; PCS Scale; Cognitive Age Scale; and LSIZ Personal Orientation Inventory - A measure of self-actualization (T_C + I Scales)	SEM test using *AMOS 5.0*

Table 4. (cont.)

Purpose of Analysis	Subjects Used in Analysis	Data Used in Analysis	Statistics
Research Object 3: Exploratory study	195 respondents (from the first mailing)	PCS subscales, POI subscales, and T_C and I major scales	Pearson correlation coefficients
		PCS subscales and Cognitive Age Scale	
		Cognitive Age Scale, POI subscales, and T_C and I major scales	

Note. PCS refers to Proximity of Clothing to Self; LSIZ refers to Life Satisfaction Index; POI refers to Personal Orientation Inventory; T_C and I refers to time-competent and inner-directed, respectively; AMOS refers to Analysis of Moment Structures; and SEM refers to Structural Equation Modeling.

CHAPTER IV

RESEARCH FINDINGS AND DISCUSSION

This chapter includes descriptions of the characteristics of the sample as well as the results of each research objective. The three research objectives are stated, the data are analyzed, and the findings are presented and discussed.

Evaluation of the Data

It is critical to investigate and describe the distributions of the data before data analysis. This allows us to more easily detect outliers affecting the average and variance, and to check the violation of assumptions for running a structural equation model. It is also important to ensure that the data were input correctly. Accuracy of data input was achieved through a three-step data entry procedure. After receiving the questionnaires from each respondent, the researcher scanned each questionnaire to do a preliminary check before entering the data into a computer. A face-to-face interview was conducted to select an appropriate person who could enter the data into the computer. One person among five interviewees was selected and trained to enter the data. This person had also been trained to read the questionnaire and codebook. After completing the data entry, the researcher randomly selected and checked the data to verify the accuracy of data entry. In addition, the accuracy of the data was also examined by inspecting for out-of-range values.

A separate computer-scoring sheet was used by respondents to answer POI items. After receiving the scoring sheets from the respondents, the researcher checked each answer sheet carefully for (1) completeness – answer sheets with more than 15

unanswered items were eliminated from the scoring, (2) cleanness of the answer sheets (i.e., answer sheets must not be folded), (3) use of a number 2 pencil. When respondents used a pen to answer the POI items rather than a number 2 pencil, the researcher remarked each item on the answer sheets using a number 2 pencil. A four-digit identification number (ID) which was identical with the clothing questionnaire ID was given from 1001 to 1198. This number was used to identify each individual. Among 198 respondents, three participants were eliminated because they didn't answer the clothing questionnaire and only filled in the POI. Therefore, a total of 195 answer sheets were sent to the EdITS for the machine scoring process.

After the sheets were checked by the researcher, they were carefully packaged in corrugated cartons before sending to the scoring company. Results were returned on a floppy disk with the POI scale scores and ID number for each individual. After receiving the results, the researcher input the POI data into the computer, and the accuracy of the data was also examined by inspecting for out-of-range values.

The normality of the data on each variable was investigated by calculating skewness and kurtosis for each variable and examining Q-Q plot, histogram, box-plot, and stem-and-leaf plot for each variable. Mardia's test for multivariate kurtosis was also used in this study (Arbuckle & Wothke, 1999; Mardia, 1982; Mardia & Foster, 1983) to assess the normality of the observed variables. When the distribution of observed variables was not multivariate normal, bootstrapping was used to obtain a corrected value of the probability for the fitting function, i.e., the Bollen-Stine bootstrapped p (Bollen & Stine, 1993).

Another corrective procedure for nonnormality is to compare the results of

various estimators, and this procedure was applied for the 40 items of the PCS Scale before running the confirmatory factor analysis (CFA) of the PCS Scale. In this study, results from both maximum likelihood (ML) and unweighted least squares (ULS) estimators are reported for the CFA of PCS Scale to be consistent with Sontag and Lee's (2004) report and because the PCS Scale items had multivariate kurtosis. Results from the ML estimator using bootstrapping are reported for an overall structural model test along with other variables. More details are presented under the headings of confirmatory factor analyses of PCS and structural equation modeling.

Descriptive Analysis

Respondents' characteristics are described in this section. Frequency distributions of age, sex, marital status, ethnicity, annual household income, education level, and occupational status are presented. These descriptions show whether the sample is normally distributed and represents the entire elderly population in the United States. Means and standard deviations of mean scores on each subscale of the PCS Scale for 250 respondents before confirming the PCS factor structure are also presented.

Demographic Characteristics of the Entire Elderly Population in the United States

To compare demographic characteristics of the elderly respondents in this study with the entire U.S. elderly population, the important demographic characteristics of the U.S. elderly population are first described based on the Census reports (Bureau of the Census, 2000a; 2004a; 2004b). Table 5 presents the summary characteristics of the U.S. elderly population (i.e., age, educational attainment, and income). The percentage of each characteristic by sex and age categories is worthwhile to examine.

Among elderly individuals in the United States, females comprise 59% and males

Table 5. *Summary Characteristics of the Elderly Population in the United States in the Year 2000, in Thousands*

	Sex					
	Male		Female		Total	
	N_M	%	N_F	%	N	%
Age						
65 – 74 years	8,303	23.8	10,088	28.8	18,391	52.6
75 – 84 years	4,879	13.9	7,482	21.4	12,361	35.3
85 and over	1,227	3.5	3,013	8.6	4,240	12.1
Total	14,409	41.2	20,583	58.8	34,992	100.0
Educational Level						
None – Elementary 08	2,286	6.7	2,973	8.7	5,259	15.4
High school 09 – 11	1,791	5.2	2,725	8.0	4,516	13.2
High school 12	4,553	13.3	7,834	22.8	12,387	36.1
College 13 – 16	3,835	11.2	4,323	12.6	8,158	23.8
Some graduate 17 and graduate degree	1,464	4.3	861	2.5	2,325	6.8
Other associate degree	599	1.7	990	3.0	1,589	4.7
Total	14,528	42.4	19,706	57.6	34,234	100.0
Income						
Less than $9,999	2,178	6.4	7,733	22.9	9,910	29.3
$10,000 to $14,999	2,907	8.6	4,536	13.4	7,443	22.0
$15,000 to $19,999	2,066	6.1	2,328	6.9	4,394	13.0
$20,000 to $27,499	2,283	6.8	1,821	5.4	4,105	12.2
$27,500 to $34,999	1,375	4.1	1,020	3.0	2,396	7.1
$35,000 to $49,999	1,474	4.4	982	2.9	2,455	7.3
$50,000 or over	2,271	6.7	805	2.4	3,076	9.1
Total	14,554	43.1	19,225	56.9	33,779	100.0
Median Income; SD	$20,363; $193		$11,845; $76		$14,664; $74	
Mean Income; SD	$31,625; $418		$16,818: $143		$23,198; $202	

Source. Bureau of the Census (2000a; 2004a; 2004b).

comprise 41%. Around 53%, 35%, and 12 % of the elderly are under the age categories of 65 to 74 years, 75 to 84 years, and 85 and over, respectively. As the elderly population's age increases, the ratio of female to male is far greater. For example, the percentage of elderly females (8.6%) is more than double the percentage of elderly males (3.5%) in the age category of 85 and over.

The range of possible educational attainments is from none to the highest being the completion of a graduate degree. Thirty-six percent of elderly individuals have obtained a high school diploma as their highest educational level. Around 24%, 15%, 13%, and 7% of elderly individuals are in the educational attainment categories of college 13 to 16, none to elementary 8, high school 9 to 11, and some graduate and graduate degree, respectively. The rest of the elderly individuals have obtained other associate degrees. With the exception of graduate degrees proportionally more women than men have attained various educational levels.

The mean income in 2000 for all elderly individuals was $23,198 per year and median income was $14,664. However, the mean and median income was quite different by sex. The mean and median incomes of elderly individuals were $31,625 and $20,363 for males, and $16,818 and $11,845 for females respectively. Around 51% of elderly individuals were at or below the income of $14,999. Among these, females account for around 70%. More specific information is given in Table 5.

Briefly looking at the elderly distribution by state in the United States for the year 2000 (see Table 6, for right column), California (CA) had the highest elderly population followed by Florida (FL), New York (NY), Texas (TX), Pennsylvania (PA), Ohio (OH), Illinois (IL), Michigan (MI), New Jersey (NJ), North Carolina (NC), and so on. Although

Table 6. *Distribution of the Elderly Survey Respondents by Sex*

State	Survey Respondents			Sample Frame	U.S. Elderly Population in 2000
	Female	Male	Total		
AK				1	35,699
AL	2 (1)	1 (0)	3 (1)	29	579,798
AR	4 (3)	1 (1)	5 (4)	26	374,019
AZ	5 (5)	4 (3)	9 (8)	30	667,839
CA	8 (6)	11 (11)	19 (17)	119	3,595,658
CO	0 (0)	2 (1)	2 (1)	10	416,073
CT	1 (1)	0 (0)	1 (1)	28	470,183
DC	1 (0)	0 (0)	1 (0)	5	69,898
DE	2 (1)	0 (0)	2 (1)	8	101,726
FL	5 (5)	3 (3)	8 (8)	95	2,807,597
GA	0 (0)	0 (0)	0 (0)	20	785,275
HI	0 (0)	0 (0)	0 (0)	5	160,601
IA	2 (1)	3 (2)	5 (3)	34	436,213
ID	0 (0)	0 (0)	0 (0)	4	145,916
IL	6 (5)	4 (3)	10 (8)	98	1,500,025
IN	0 (0)	2 (2)	2 (2)	11	752,831
KS	1 (0)	0 (0)	1 (0)	21	356,229
KY	0 (0)	0 (0)	0 (0)	13	504,793
LA	3 (3)	1 (1)	4 (4)	49	516,929
MA	2 (2)	1 (1)	3 (3)	27	860,162
MD	4 (3)	4 (1)	8 (4)	45	599,307
ME	1 (1)	2 (2)	3 (3)	8	183,402
MI	10 (7)	8 (6)	18 (13)	117	1,219,018
MN	0 (0)	1 (0)	1 (0)	18	594,266
MO	3 (3)	0 (0)	3 (3)	16	755,379
MS	3 (2)	1 (0)	4 (2)	22	343,523
MT	2 (1)	0 (0)	2 (1)	6	120,949
NC	5 (5)	6 (3)	11 (8)	74	969,048
ND	2 (1)	0 (0)	2 (1)	7	94,478
NE	2 (3)	0 (0)	2 (3)	11	232,195
NH	1 (1)	0 (0)	1 (1)	9	147,970
NJ	6 (4)	2 (2)	8 (6)	54	1,113,136
NM	2 (1)	0 (0)	2 (1)	9	212,225
NV	1 (1)	1 (0)	2 (1)	9	218,929
NY	6 (5)	5 (5)	11 (10)	97	2,448,352
OH	14 (11)	8 (7)	22 (18)	140	1,507,757
OK	5 (4)	2 (2)	7 (6)	32	455,950
OR	4 (4)	2 (2)	6 (6)	18	438,177
PA	2 (2)	3 (2)	5 (4)	52	1,919,165
RI	0 (0)	2 (2)	2 (2)	11	152,402
SC	3 (1)	1 (0)	4 (1)	38	485,333
SD	0 (0)	0 (0)	0 (0)	5	108,131
TN	0 (0)	1 (1)	1 (1)	17	703,311
TX	6 (6)	2 (1)	8 (7)	78	2,072,532

Table 6. (cont.)

State	Survey Respondents			Sample Frame	U.S. Elderly Population in 2000
	Female	Male	Total		
UT	2 (2)	2 (2)	4 (4)	12	190,222
VA	5 (4)	1 (1)	6 (5)	49	792,333
VT	0 (0)	0 (0)	0 (0)	2	77,510
WA	5 (4)	2 (1)	7 (5)	35	662,148
WI	8 (7)	9 (6)	17 (13)	60	702,553
WV	1 (0)	0 (0)	1 (0)	15	276,895
WY	0 (0)	1 (1)	1 (1)	1	57,693
Missing	5 (3)	1 (1)	6 (4)		
Total	150 (76)	100 (76)	250 (195)	1,700	34,991,753

Source. Bureau of the Census (2000a).
Note. Number inside of parentheses indicates the number of elderly respondents from the first mailing. Number outside of parentheses indicates the total number of elderly respondents from the first and second mailings.

distribution of survey respondents by state is also given in Table 6, no comparison of the representation of the sample is made with the U.S. elderly population by state because the purchased sampling list was not proportionately selected by state.

Demographic Characteristics of the Survey Respondents

This part presents summary characteristics from the survey respondents in this study. Cases with missing data or invalid answers deleted from the study are excluded. Here the researcher presents the characteristics of the respondents under two different categories. One group of respondents from both first and second mailing ($N_{1+2} = 250$) is used for research objective one and then a second group of respondents from the first mailing ($N_1 = 195$) is used for research objectives two and three (see Table 4 in Chapter III).

As Table 6 shows, survey respondents were from 45 states among the 50 states in

the United States plus the District of Columbia. Table 7 presents summary demographic characteristics from the survey respondents (i.e., age, educational attainment, race or ethnicity, income, living arrangement, title of a recent occupation, and current employment status). The columns on the left present characteristics of respondents from both first and second mailings (N_{1+2}) and the columns on the right present characteristics of respondents from the first mailing (N_1).

For both groups, the ages of elderly individuals in this study ranged from 65 years to 94 years. The range of years was 29 years. Mean and median ages were 76 and 75, respectively. For both groups, females comprised about 60% and males comprised about 40% of the sample. As the elderly sample's age increased, the ratio of females to males increased greatly. For example, the percentage of elderly female respondents was over two times greater than the percentage of elderly males in both the age categories of 75 to 84 years and of 85 years and over whereas the percentages of males and females was roughly equal in the 65 to 74 year range. The respondents in this study were representative of the U.S. elderly population based on the proportion by age category and sex (see Table 5).

The range of educational attainments was from none through 8 grades of elementary school to the completion of some graduate work or graduate degree. Overall, about 85% of the sample in both groups had completed high school or higher levels of education. With the exception of graduate school, there was a greater percentage of women than men in each individual category. Results show that the elderly individuals who responded to this study were more highly educated compared with the entire U.S. elderly population, evidenced by the higher proportion of the sample with undergraduate

Table 7. *Summary Characteristics of the Elderly Survey Respondents*

	Sample for Test of PCS Scale ($N_{1+2} = 250$)						Sample for Test of Theoretical Model ($N_1 = 195$)					
			Sex						Sex			
	Total		Male		Female		Total		Male		Female	
	N	%	N_M	%	N_F	%	N	%	N_M	%	N_F	%
<u>Age Range</u>												
65 to 74 years	123	49.2	60	24.0	63	25.2	90	46.2	43	22.1	47	24.1
75 to 84 years	95	38.0	30	12.0	65	26.0	77	39.5	25	12.8	52	26.7
85 years and over	32	12.8	10	4.0	22	8.8	28	14.3	8	4.1	20	10.2
Total	250	100.0	100	40.0	150	60.0	195	100.0	76	39.0	119	61.0
<u>Education Level</u>												
None – Elementary 08	11	4.4	4	1.6	7	2.8	8	4.1	2	1.0	6	3.1
High school 09 – 11	25	10.0	9	3.6	16	6.4	22	11.3	8	4.1	14	7.2
High school 12	91	36.4	32	12.8	59	23.6	62	31.8	18	9.2	44	22.6
College 13 – 16	71	28.4	29	11.6	42	16.8	56	28.7	24	12.3	32	16.4
Some graduate 17 and graduate degree	52	20.8	26	10.4	26	10.4	47	24.1	24	12.3	23	11.8
Total	250	100.0	100	40.0	150	60.0	195	100.0	76	39.0	119	61.0

Table 7. (cont.)

	Sample for Test of PCS Scale ($N_{1+2} = 250$)						Sample for Test of Theoretical Model ($N_1 = 195$)					
			Sex						Sex			
	Total		Male		Female		Total		Male		Female	
	N	%	N_M	%	N_F	%	N	%	N_M	%	N_F	%
Ethnicity												
White	228	91.2	96	38.4	132	52.8	178	91.3	73	37.5	105	53.8
Black or African American	8	3.2	1	0.4	7	2.8	5	2.6	0	0.0	5	2.6
Asian	1	0.4	1	0.4	0	0.0	1	0.5	1	0.5	0	0.0
American Indian or Alaska Native	3	1.2	1	0.4	2	0.8	3	1.5	1	0.5	2	1.0
Native Hawaiian or Other Pacific Islander	0	0.0	0	0.0	0	0.0	0.0	0.0	0	0.0	0	0.0
Other	7	2.8	1	0.4	6	2.4	6	3.1	1	0.5	5	2.6
Missing	3	1.2	0		3		2	1.0	0	0.0	2	1.0
Total	250	100.0	100	40.0	150	60.0	195	100.0	76	39.0	119	61.0
Hispanic or Latino												
Yes	5	2.0	0	0.0	5	2.0	1	0.5	0	0	1	0.5
No	238	95.2	96	38.4	142	56.8	191	98.0	75	38.5	116	59.5
Missing	7	2.8	4	1.6	3	1.2	3	1.5	1	0.5	2	1.0
Total	250	100.0	100	40.0	150	60.0	195	100.0	76	39.0	119	61.0

Table 7. (cont.)

	Sample for Test of PCS Scale ($N_{1+2} = 250$)						Sample for Test of Theoretical Model ($N_1 = 195$)					
			Sex						Sex			
	Total		Male		Female		Total		Male		Female	
	N	%	N_M	%	N_F	%	N	%	N_M	%	N_F	%
Income												
Less than $9,999	22	8.8	6	2.4	16	6.4	17	8.7	4	2.0	13	6.7
$10,000 to $14,999	30	12.0	5	2.0	25	10.0	29	14.9	5	2.6	24	12.3
$15,000 to $19,999	26	10.4	9	3.6	17	6.8	22	11.3	7	3.6	15	7.7
$20,000 to $27,499	49	19.6	16	6.4	33	13.2	36	18.5	11	5.7	25	12.8
$27,500 to $34,999	20	8.0	7	2.8	13	5.2	10	5.1	3	1.5	7	3.6
$35,000 to $49,999	40	16.0	24	9.6	16	6.4	31	15.9	17	8.7	14	7.2
$50,000 or over	45	18.0	28	11.2	17	6.8	40	20.5	26	13.3	14	7.2
Missing	18	7.2	5	2.0	13	5.2	10	5.1	3	1.5	7	3.6
Total	250	100.0	100	40.0	150	60.0	195	100.0	76	39.0	119	61.0
	Mode = $20,000 to $27,499 Median = $20,000 to $27,499						Mode = $50,000 or over Median = $20,000 to $27,499					

Table 7. (cont.)

	Sample for Test of PCS Scale ($N_{1+2} = 250$)						Sample for Test of Theoretical Model ($N_1 = 195$)					
			Sex						Sex			
	Total		Male		Female		Total		Male		Female	
	N	%	N_M	%	N_F	%	N	%	N_M	%	N_F	%
Living Situation												
Alone	116	46.4	21	8.4	95	38.0	99	50.8	17	8.7	82	42.1
Spouse	103	41.2	77	30.8	26	10.4	75	38.5	58	29.8	17	8.7
Relative(s)	23	9.2	1	0.4	22	8.8	17	8.7	0	0.0	17	8.7
Friend(s)	3	1.2	1	0.4	2	0.8	1	0.5	1	0.5	0	0.0
Alone or relative(s)	1	0.4	0	0.0	1	0.4	1	0.5	0	0.0	1	0.5
Spouse and relative(s)	2	0.8	0	0.0	2	0.8	2	1.0	0	0.0	2	1.0
Caregiver	1	0.4	0	0.0	1	0.4						
Assisted living center [a]	1	0.4	0	0.0	1	0.4						
Total	250	100.0	100	40.0	150	60.0	195	100.0	76	39.0	119	61.0

Table 7. (cont.)

	Sample for Test of PCS Scale ($N_{1+2} = 250$)						Sample for Test of Theoretical Model ($N_1 = 195$)					
			Sex						Sex			
	Total		Male		Female		Total		Male		Female	
	N	%	N_M	%	N_F	%	N	%	N_M	%	N_F	%
Occupation: Recent job title												
Management, professional, & related	116	46.4	46	18.4	70	28.0	102	52.3	42	21.5	60	30.8
Service	27	10.8	11	4.4	16	6.4	21	10.8	7	3.6	14	7.2
Sales and office	40	16.0	5	2.0	35	14.0	26	13.3	2	1.0	24	12.3
Farming, fishing, and forestry	5	2.0	5	2.0	0	0.0	3	1.5	3	1.5	0	0.0
Construction, extraction, & maintenance	16	6.4	14	5.6	2	0.8	11	5.7	9	4.7	2	1.0
Production, transportation, & material moving	11	4.4	8	3.2	3	1.2	9	4.6	7	3.6	2	1.0
Other	2	0.8	1	0.4	1	0.4	1	0.5	0	0.0	1	0.5
Missing	33	13.2	10	4.0	23	9.2	22	11.3	6	3.1	16	8.2
Total	250	100.0	100	40.0	150	60.0	195	100.0	76	39.0	119	61.0

Table 7. (cont.)

	Sample for Test of PCS Scale ($N_{1+2} = 250$)						Sample for Test of Theoretical Model ($N_1 = 195$)					
			Sex						Sex			
	Total		Male		Female		Total		Male		Female	
	N	%	N_M	%	N_F	%	N	%	N_M	%	N_F	%
Current Employment Status												
Employed full-time	18	7.2	8	3.2	10	4.0	16	8.2	7	3.6	9	4.6
Employed part-time	10	4.0	4	1.6	6	2.4	6	3.1	2	1.0	4	2.1
Retired	157	62.8	67	26.8	90	36.0	117	60.0	49	25.1	68	34.9
Retired & employed...												
full-time	4	1.6	3	1.2	1	0.4	2	1.0	2	1.0	0	0.0
part-time	10	4.0	6	2.4	4	1.6	8	4.1	5	2.6	3	1.5
temporarily unemployed	1	0.4	0	0.0	1	0.4	0	0.0	0	0.0	0	0.0
looking for job	1	0.4	0	0.0	1	0.4	1	0.5	0	0.0	1	0.5
Unemployed, looking for job	2	0.8	1	0.4	1	0.4	2	1.0	1	0.5	1	0.5
Temporarily unemployed	1	0.4	0	0.0	1	0.4	1	0.5	0	0.0	1	0.5
Full-time volunteer work & employed part-time	1	0.4	0	0.0	1	0.4	1	0.5	0	0.0	1	0.5

Table 7. (cont.)

	Sample for Test of PCS Scale ($N_{1+2} = 250$)						Sample for Test of Theoretical Model ($N_1 = 195$)					
			Sex						Sex			
	Total		Male		Female		Total		Male		Female	
	N	%	N_M	%	N_F	%	N	%	N_M	%	N_F	%
Current employment status (cont.)												
Part-time volunteer work	5	2.0	0	0.0	5	2.0	3	1.5	0	0.0	3	1.5
Part-time volunteer work & ...												
employed full-time	1	0.4	0	0.0	1	0.4	1	0.5	0	0.0	1	0.5
employed part-time	3	1.2	0	0.0	3	1.2	3	1.5	0	0.0	3	1.5
retired	29	11.6	9	3.6	20	8.0	28	14.4	8	4.1	20	10.3
retired & employed full-time	1	0.4	1	0.4	0	0.0	1	0.5	1	0.5	0	0.5
retired & employed part-time	4	1.6	1	0.4	3	1.2	3	1.5	1	0.5	2	1.0
Missing	2	0.8	0	0.0	2	0.8	2	1.0	0	0.0	2	1.0
Total	250	100.0	100	40.0	150	60.0	195	100.0	76	39.0	119	61.0

Note. N_{1+2} is the total number of respondents from the first and second mailing who completed the clothing questionnaire; N_1 is the total number of respondents from the first mailing who completed both the clothing questionnaire and the Personal Orientation Inventory.

[a] This person was not dropped from the study because she indicated that she just recently moved to an assisted living center because of her health.

and graduate education than in the U.S. population (see Table 5).

With regard to ethnicity, the largest group was White, accounting for around 91% of respondents. The Black or African American group represented around 3%. Under 2% of respondents indicated only American Indian or Alaska Native. The smallest race group was the Asian. No one responded under the ethnicity category of Native Hawaiian or Other Pacific Islander in this study. Most of the respondents answered they were not "Hispanic or Latino." According to the census reports (Bureau of the Census, 2000b), around 75% and 12% of elderly people in the United States were White and Black or African American, respectively. Eighty-seven percent were not Hispanic. Results show that the elderly individuals who responded to this study were more from the White and from non Hispanic origin compared with the entire U.S. elderly population.

The median income range for both groups of elderly was from $20,000 to $27,499 per year. Among those who reported their income, the income level was quite different by sex. For both groups, the number of females with income less than $14,999 per year was almost four times more than the number of male respondents at this income level. A greater proportion of respondents in this study were in higher income range categories (from $20,000 to $50,000 and more) compared with the income level of the U. S. elderly population (see Table 5). More specific sample information is given in Table 7. There was a substantial amount of missing data on the income question. Certainly, one reason for this may be that many respondents only gave information that they felt secure or comfortable to answer.

Around half of the respondents from both groups were living alone, and the second largest proportion of the respondents resided with their spouse. Table 7 clearly

shows that a larger number of female respondents were living alone than the number of male respondents. Among the respondents who resided with their spouse, the number of males was about three times the number of females. One way to explain this is that female elderly individuals' life expectancies are higher than male elderly individuals' life expectancies. Less than 10% of the respondents were residing with relatives such as sister, son or daughter, friends, or others. A few answered that they stayed half of the year with their relatives and the rest of the year lived with their spouse or alone.

A large number of respondents were most recently employed in management, professional, and related occupations followed by sales and office occupations, service occupations, construction, extraction, and maintenance occupations, and production, transportation, and material moving occupations. A few respondents were from the farming, fishing, and forestry occupations. The subheading of "Occupation: Recent job title" in Table 7 shows more detailed information.

Regarding their current employment status, over 80% of the respondents were retired. Among those who were retired, around 26% were involved in other activities such as another full-time or part-time job or volunteer work. Among the survey respondents, around 20% and 17% of respondents from the first mailing and the first and second mailing, respectively, were involved in part-time volunteer work.

Overall, the data from the respondents in this study were consistent with the data of the U.S. elderly population in terms of the proportion by sex and age. However, it is important to be conscious of the fact that the respondents were mostly from the White ethnic group, had higher education, and were in higher income ranges compared with that of the U.S. elderly population.

Proximity of Clothing to Self (PCS)

The initial set of 40 PCS items along with variable names grouped by dimension are presented in Appendix J. In Table 8, the means and standard deviations of the respondents' mean scores on each PCS subscale by different age categories and by sex are shown. The data from 250 respondents (N_{1+2}) were used for the PCS confirmatory factor analysis. Elderly individuals in this study tended to feel moderately psychologically close toward clothing across six dimensions (Mean $_{Total}$ = 2.96 to 4.27 on 6-point scale), a result similar to findings from previous studies (Lee, 1997; Lynn, 1991; Schmerbauch, 1993; Sontag, 1978).

Table 8. *Means and Standard Deviations of the Participants' Mean Scores on Each Subscale of PCS for Different Age Categories*

PCS Subscale	Total (N = 250) Mean (SD)	Female (N_F = 150) Mean (SD)			Male (N_M = 100) Mean (SD)		
		65 to 74 (n = 62)	75 to 84 (n = 65)	85 and over (n = 22)	65 to 74 (n = 60)	75 to 84 (n = 30)	85 and over (n = 10)
Dimension 1	3.74 (1.24)	3.68 (1.14)	4.29 (1.09)	4.23 (1.17)	3.15 (1.26)	3.54 (1.16)	3.54 (1.40)
Dimension 2	2.96 (1.16)	2.89 (1.06)	3.34 (1.06)	3.34 (1.20)	2.60 (1.17)	2.74 (.97)	3.01 (1.23)
Dimension 3	3.24 (1.31)	3.21 (1.31)	3.59 (1.37)	3.60 (1.30)	2.73 (1.16)	3.13 (1.24)	3.68 (1.31)
Dimension 4	3.92 (1.28)	3.99 (1.17)	4.54 (1.05)	4.62 (1.08)	3.14 (1.31)	3.44 (1.14)	4.01 (1.17)
Dimension 5	4.27 (1.23)	4.37 (1.11)	4.88 (.95)	4.90 (.99)	3.51 (1.25)	3.75 (1.15)	4.33 (1.15)
Dimension 6	3.80 (1.18)	4.15 (1.02)	4.39 (.98)	4.44 (.92)	2.84 (.98)	3.37 (1.04)	3.37 (1.08)

Note. The possible range of mean scores is 1 to 6 on each subscale; Dimension 1 = Clothing in relation to self as structure; Dimension 2 = Clothing in relation to self as process – communication of self to others; Dimension 3 = Clothing in relation to self as process – response to judgments of others; Dimension 4 = Clothing in relation to self-esteem – evaluative process dominant; Dimension 5 = Clothing in relation to self-esteem – affective process dominant; Dimension 6 = Clothing in relation to body image and body cathexis.

Significant mean differences on the PCS subscales by different age categories and sex will be reported and discussed under the title of summary statistics for the variables included in the structural equation model section of Chapter IV after the PCS factor structure is confirmed for research objective 1. In spite of not running significant test here, two major patterns were shown in Table 8. The PCS mean scores in the female age groups were higher than those in the male age groups with one exception in which males age 85 and over scored higher than females of this age on *clothing in relation to self as process – response to judgments of others*. For females, 65 to 74 years old PCS mean scores tend to be lower than those of 75 to 84 year old females for each of the PCS subscales.

Descriptive statistics for confirmed PCS dimensions, age identity, self-actualization, self-assessed health, and psychological well-being are presented under the subheading of summary statistics for the variables in the structural equation modeling: conceptual model test section.

Confirmatory Factor Analysis of the PCS Scale

Multivariate Normality Assumption

As already mentioned in the description of the data analysis procedures in Chapter III, the researcher carefully examined the normality of the 40 items of the PCS Scale. DeCarlo (1997) argued that the obtained value of χ^2 is inaccurate, often inflated, and the probability levels are lower than is actually correct when the distribution of observed variables is not multivariate normal. To check this, Mardia's test for multivariate kurtosis was used in this study (Arbuckle & Wothke, 1999; Mardia, 1982; Mardia & Foster, 1983). The data violated the distributional assumption of multivariate normality. Therefore, to

correct for this, bootstrapping was used to obtain a corrected value of the probability for the fitting function statistic, i.e., the Bollen-Stine bootstrapped *p* (Bollen & Stine, 1993) for chi-square and the discrepancy function. One thousand subsamples of the same size as the parent sample ($N_{1+2} = 250$) were drawn randomly *with replacement*. This procedure provides an empirical investigation of the variability of parameter estimates (e.g., factor loadings) and indexes of fit such as chi-square (Byrne, 2001).

This researcher also compared the results of various estimators such as the asymptotically distribution-free (ADF), maximum likelihood (ML), generalized least squares (GLS), and unweighted least squares (ULS) to identify appropriate estimators along with an application of bootstrapping to correct for nonnormality (Arbuckle & Wothke, 1999). Table 9 presents the mean of discrepancy between sample and population across 1,000 bootstrap samples for each PCS dimension using the various estimators mentioned above. The columns, labeled as C_{ADF}, C_{ML}, C_{GLS}, and C_{ULS}, show the relative performance of the four estimation methods for sample according to the population discrepancies, C_{ADF}, C_{ML}, C_{GLS}, and C_{ULS}. Although the four columns of the table disagreed on the exact ordering of the four estimation methods, this researcher chose the estimation methods which had lowest mean discrepancy. For all PCS dimensions, C_{ULS} was the best estimation method for the C_{ULS} criterion. For PCS dimensions 4, 5, and 6, C_{ML} was the best estimation method for the C_{ML} criterion but still C_{ULS} was an appropriate estimation method for the C_{ML} criterion because of having values very close to those for C_{ML}. For PCS dimensions 1, 2, and 3, C_{ULS} was the best estimation method for the C_{ML} criterion but still C_{ML} was an appropriate estimation method for the C_{ML} criterion because of having values very close to those for C_{ULS}. Therefore, results from

Table 9. *Comparison among Various Estimation Methods: Application of Bootstrapping*

		Population discrepancy for evaluation			
		C_{ADF}	C_{ML}	C_{GLS}	C_{ULS}
PCS Dimension 1 – 7 items					
Sample discrepancy for estimation	C_{ADF}	59.459 (.297)	184.821 (2.363)	83.071 (.556)	435.515 (8.585)
	C_{ML}	67.009 (.378)	83.958 (.305)	91.633 (.673)	210.122 (3.474)
	C_{GLS}	61.775 (.314)	136.257 (1.108)	68. 261 (.272)	247.658 (3.601)
	C_{ULS}	65.934 (.361)	83.535 (.295)	90.294 (.633)	206.262 (3.467)
PCS Dimension 2 – 7 items					
Sample discrepancy for estimation	C_{ADF}	45.978 (.231)	185.404 (1.599)	76.870 (.438)	361.178 (8.764)
	C_{ML}	72.570 (.537)	94.273 (.291)	85.787 (.604)	217.571 (3.971)
	C_{GLS}	48. 616 (.262)	138.303 (.880)	64.360 (.239)	239.383 (3.980)
	C_{ULS}	72.277 (.534)	93.806 (.281)	85.159 (.592)	212.867 (3.931)
PCS Dimension 3 – 4 items					
Sample discrepancy for estimation	C_{ADF}	15.633 (.135)	30.331 (.431)	19.100 (.186)	78.403 (1.739)
	C_{ML}	17.284 (.175)	23.646 (.204)	19.111 (.205)	71.400 (1.550)
	C_{GLS}	15.803 (.135)	26.740 (.287)	17. 291 (.146)	72.862 (1.551)
	C_{ULS}	16.568 (.153)	23.611 (.207)	18.459 (.181)	70.026 (1.5335)
PCS Dimension 4 – 8 items					
Sample discrepancy for estimation	C_{ADF}	83.970 (.366)	271.523 (3.471)	111.116 (.757)	673.000 (15.874)
	C_{ML}	103.469 (.513)	107.342 (.347)	115.941 (.643)	264.084 (4.889)
	C_{GLS}	82.836 (.328)	183.497 (1.416)	87.699 (.324)	313.664 (4.952)
	C_{ULS}	102.059 (.484)	107.385 (.347)	115.942 (.630)	260.118 (4.829)
PCS Dimension 5 – 7 items					
Sample discrepancy for estimation	C_{ADF}	51.646 (.255)	296.698 (3.964)	97.848 (.757)	261.857 (5.693)
	C_{ML}	81.245 (.672)	95.383 (.370)	89.681 (.848)	171.157 (3.611)
	C_{GLS}	55.978 (.319)	153.838 (1.374)	67.480 (.324)	186.038 (3.621)
	C_{ULS}	79.997 (.647)	95.885 (.391)	88.254 (.815)	169.408 (3.619)
PCS Dimension 6 – 7 items					
Sample discrepancy for estimation	C_{ADF}	69.511 (.246)	204.910 (1.488)	84.857 (.396)	512.604 (7.745)
	C_{ML}	115.369 (.698)	93.224 (.275)	97.175 (.634)	284.015 (3.463)
	C_{GLS}	79.195 (.339)	148.086 (.940)	67.035 (.212)	337.323 (3.488)
	C_{ULS}	110.898 (.650)	93.519 (.271)	94.754 (.599)	271.694 (3.224)

Note. Mean of discrepancy across 1,000 bootstrap samples. Numbers in parentheses are standard error. ADF = Asymptotically distribution-free; ML = Maximum likelihood; GLS = Generalized least squares; ULS = Unweighted least squares.

both maximum likelihood (ML) and unweighted least squares (ULS) estimators are reported for the PCS confirmatory factor analysis.

In the elderly group, multivariate kurtosis did not increase significantly for each round of confirmatory factor analysis. Thus, both ML and ULS were appropriate estimators to use. Results from both estimation methods using bootstrapping were reported to be consistent with Sontag and Lee's (2004) study on adolescent group. The Bollen-Stine bootstrapped *p* was used to evaluate the nonsignificance of the discrepancy function and of the chi-square statistic with high probabilities desirable in order not to reject the null hypothesis.

CFA Round 1: Single Factor Analysis

The objective for Round 1 was to arrive at a reduced and best set of observed variables for each of the six dimensions of PCS such that the standardized factor loading of an item's hypothesized PCS latent factor was high, the variance explained by each item (R^2) was high, and the χ^2 for the ML estimator or discrepancy function for the ULS estimator was nonsignificant. For each PCS dimension, a first-order measurement model was used that postulated one latent factor having direct effects on observed variables, and each observed variable had an uncorrelated error of measurement. For example, PCS dimension 1, Clothing in Relation to Self as Structure, has direct effects on the seven observed variables (i.e., PCSD105, PCSD106, PCSD107, PCSD108, PCSD109, PCSD111, and PCSD1_40); these variables have uncorrelated errors of measurement. PCS statements grouped by dimension for the 40 items that were used in Round 1 are presented in Appendix J.

For each of the six dimensions, the χ^2 and discrepancy function were significant

(df = 14 for PCS DIM1, DIM2, DIM5, and DIM6; df = 20 for PCS DIM4; df = 2 for PCS DIM3; Bollen-Stine bootstrapped p = .005). For the six PCS dimensions using the ULS estimator, the discrepancy function ranged from 70.026 to 271.694; AGFI ranged from .988 to .995. Using the ML estimator, χ^2 ranged from 10.963 to 80.573; AGFI ranged from .828 to .886; and RMSEA ranged from .110 to .134.

As an initial step to reduce the number of items, the researcher checked whether any item across each estimator had an R^2 less than .35 and a standardized factor loading less than .60. No elimination was made based on these criteria except the two items under PCS Dimension 6 (PCSD603 and PCSD613). Standardized residual covariances (SRC) also were examined. SRCs represent the number of standard deviation units that the observed residuals are from the zero residuals of a perfectly fitted model. Values greater than 2.58 are considered large (Byrne, 2001) so this criterion was used in making further deletion of items. No SRC values greater than 2.58 were found through the screening process. None of the PCS observed variables were deleted based on this criterion. After deleting PCS items, the Bollen-Stine bootstrapped p was evaluated for its nonsignificance. Any deletion of PCS items could not reach a non-significant p value.

However, this researcher made a decision to delete one of the PCS items, PCSD1_40, "what I wear is who I am" after discussing this with the project director. The original set of 39 items of the Sontag and Lee (2004) PCS Scale did not include this item. They recommended including the item "what I wear is who I am" for the first round CFA in future studies because item PCSD105 "what I wear is consistent with who I am" had lower factor loading and R^2 than expected, perhaps due to difficulty with the word "consistent." The researcher in this study applied their recommendation and compared

the standardized factor loading and R^2 between PCSD1_40 and PCSD105. Under the ULS estimator, the standardized factor loading and R^2 for PCSD1_40 and PCSD105 were .66 and .43, and .76 and .57, respectively. Under the ML estimator, the standardized factor loading and R^2 for PCSD1_40 and PCSD105 were .66 and .44, and .76 and .57, respectively. PCSD105 performed better than PCSD1_40 in this elderly group; therefore, the decision was made to retain PCSD105 and to delete PCSD1_40.

Table 10 reports the results of Round 1 with deletions, showing for each item retained the values of the standardized factor loading, standard error, critical ratio, and squared multiple correlation coefficient. Table 11 reports the overall model fit and goodness of fit indexes. As shown in Table 10, 37 items were retained at the conclusion of Round 1. For the ULS estimator, all factor loadings were significantly greater than zero; standardized factor loadings ranged from .61 to .88; and R^2 ranged from .37 to .78. For the ML estimator, all factor loadings were significantly greater than zero; standardized factor loadings ranged from .61 to .88; and R^2 ranged from .37 to .77.

As shown in Table 11 with these items, overall model fit didn't achieve the nonsignificant test result of the null hypothesis for each dimension [discrepancy function (ULS estimator) ranged from 3.40-27.01, Bollen-Stine bootstrapped *p* ranged from .001-.012; χ^2 (ML estimator) ranged from 10.96-80.57, Bollen-Stine bootstrapped *p* ranged from .001-.015]. The goodness of fit indexes were excellent (GFI, AGFI, NFI, and IFI were greater than .95) under ULS estimator. Under the ML estimator, the goodness of fit indexes were fairly acceptable (GFI, NFI, and IFI were greater than .90; AGFI ranged from .83-.90; RMSEA was larger than .10). Results were somewhat different for both ML and ULS estimators, especially for AGFI. The best set of items for each of the six

Table 10. *Standardized Factor Loadings and Squared Multiple Correlations for PCS Items Retained in Six PCS Dimensions at Conclusion of Round 1 Confirmatory Factor Analysis*

Dimension #/ Variable	Dimension Name/Item	λ_s[a]		*SE*[b]	Critical Ratio[b]	$R^{2,c}$	
		F_{ULS}	F_{ML}	F_{ML}	F_{ML}	F_{ULS}	F_{ML}
Dimension 1:	Clothing in Relation to Self as Structure (6 items)						
PCSD105	What I wear is consistent with who I am.	.76	.76	–	–	.58	.58
PCSD106	My clothing is a part of me, not just a simple possession.	.78	.78	.09	12.56*	.61	.61
PCSD107	Clothes help me become the person I want to be.	.76	.75	.09	12.05*	.57	.57
PCSD108	The clothes I wear help me to be who I am.	.84	.84	.09	13.61*	.71	.71
PCSD109	My clothing reflects how I feel about myself.	.65	.64	.08	10.11*	.42	.41
PCSD111	I am a certain type of person, and my clothes reflect that.	.76	.76	.09	12.01*	.58	.57
Dimension 2:	Clothing in Relation to Self as Process–Communication of Self to Others (7 items)						
PCSD202	My clothing gives others an idea about my interests or activities.	.80	.80	.07	13.84*	.64	.64
PCSD203	My clothing shows others how I think and feel about myself.	.79	.79	–	–	.62	.62
PCSD204	I try to project a certain image of myself to others through my clothing.	.76	.75	.07	12.75*	.58	.56

Table 10. (cont.)

Dimension #/ Variable	Dimension Name/Item	λ_s[a]		SE[b]	Critical Ratio[b]	$R^{2,c}$	
		F_{ULS}	F_{ML}	F_{ML}	F_{ML}	F_{ULS}	F_{ML}
PCSD207	I often wear certain clothing to let people know what kind of person I am.	.81	.81	.07	14.12*	.65	.66
PCSD208	I want my clothes to make a statement about me without any need for words.	.81	.80	.08	13.91*	.66	.65
PCSD211	What I wear and the way I wear it show others my attitudes.	.74	.74	.07	12.48*	.55	.54
PCSD212	Through my clothing, I can show my values to others.	.83	.84	.08	14.62*	.69	.70
Dimension 3:	Clothing in Relation to Self as Process–Response to Judgments of Others (4 items)						
PCSD302	How I look in my clothing is important because I want others to accept me.	.77	.78	.09	11.16*	.60	.60
PCSD309	It matters to me that people make judgments about the type of person I am by the way I dress.	.77	.77	–	–	.60	.59
PCSD312	I care about what other people think of how I look in my clothes.	.70	.70	.09	10.20*	.49	.49
PCSD313	I'm careful in wearing certain styles or brands of clothing because they affect how people respect me.	.74	.74	.09	10.80*	.54	.55

Table 10. (cont.)

Dimension #/ Variable	Dimension Name/Item	λ_s[a]		SE[b]	Critical Ratio[b]	$R^{2,c}$	
		F_{ULS}	F_{ML}	F_{ML}	F_{ML}	F_{ULS}	F_{ML}
Dimension 4:	Clothing in Relation to Self-esteem–Evaluative Process Dominant (8 items)						
PCSD402	The clothes I like to wear help me feel self-assured.	.84	.85	.07	16.89*	.71	.72
PCSD403	My self-confidence increases when I dress appropriately.	.84	.85	–	–	.70	.72
PCSD404	I try to buy clothing that makes me feel attractive.	.75	.75	.07	13.97*	.57	.57
PCSD406	When I wear clothes that make me feel good, I am better able to talk with others.	.78	.78	.07	14.82*	.61	.61
PCSD407	Dressing up makes me feel important.	.61	.61	.08	10.46*	.37	.37
PCSD409	Good quality clothes that look good on me make me feel competent.	.82	.81	.07	15.60*	.67	.65
PCSD410	The way I dress is important in giving me a sense of being in control of my life.	.78	.78	.07	14.75*	.61	.61
PCSD413	When I feel good about what I am wearing, then I have confidence in myself.	.77	.77	.06	14.33*	.59	.59
Dimension 5:	Clothing in Relation to Self-esteem–Affective Process Dominant (7 items)						
PCSD502	Certain clothes make me feel good about myself.	.62	.62	.05	11.13*	.39	.39

Table 10. (cont.)

Dimension #/ Variable	Dimension Name/Item	λ_s[a]		SE[b]	Critical Ratio[b]	$R^{2,c}$	
		F_{ULS}	F_{ML}	F_{ML}	F_{ML}	F_{ULS}	F_{ML}
PCSD506	Taking time to dress up gives me a feeling of pride in how I look.	.88	.88	–	–	.78	.77
PCSD507	When I look good in what I wear, I feel content with myself.	.84	.84	.05	17.65*	.70	.70
PCSD508	When I look good in my clothes, I feel good about myself.	.86	.85	.05	18.25*	.73	.72
PCSD509	When I feel good about myself, I take care in getting dressed.	.85	.85	.05	18.36*	.73	.73
PCSD511	I feel good about myself when I have something new to wear.	.74	.75	.06	14.53*	.55	.56
PCSD513	I feel better about myself when I am well dressed.	.80	.80	.05	16.39*	.64	.65
Dimension 6:	Clothing in Relation to Body Image and Body Cathexis (5 items)						
PCSD605	I avoid certain styles or colors in clothing that do not enhance my body build or figure.	.67	.68	–	–	.45	.46
PCSD608	I wear certain clothing styles to change the way my body looks.	.74	.74	.10	9.72*	.54	.54
PCSD609	The way my clothing fits affects the way I feel about my body.	.68	.69	.10	9.19*	.47	.47

Table 10. (cont.)

Dimension #/ Variable	Dimension Name/Item	λ_s[a]		SE[b]	Critical Ratio[b]	$R^{2,c}$	
		F_{ULS}	F_{ML}	F_{ML}	F_{ML}	F_{ULS}	F_{ML}
PCSD610	When I'm dissatisfied with a part of my body, I wear clothing that draws attention away from it.	.70	.71	.11	9.45*	.49	.50
PCSD611	I choose clothes that accent the parts of my body that I li ke.	.78	.77	.11	10.03*	.61	.59

Note. $N = 250$.

[a]λ_s = standardized factor loading.

[b]Standard errors (*SE*s) and critical ratios are not computed for F_{ULS} in AMOS 5.0. Dash (–) indicates λ was set to 1.0, therefore no standard errors or critical ratios are given.

[c]R^2 = squared multiple correlation coefficient. Values range from zero to one with higher values indicative of reliable variance explained.

*Factor loading is significantly different from zero at $\alpha = .05$.

Table11. *Overall Model Fit and Goodness of Fit Indexes for Six PCS Dimensions with Items Retained at Conclusion of Round 1 Confirmatory Factor Analysis*

Dimension/ Estimator	χ^2	Discrepancy Function	Bollen-Stine Bootstrapped *p*	GFI	AGFI	NFI	IFI	RMSEA
Dimension 1: Clothing in Relation to Self as Structure (6 items; *df* = 9)								
F_{ULS}	NA	12.824	.002	.996	.991	.994	NA	NA
F_{ML}	44.268	NA	.003	.943	.867	.944	.955	.125
Dimension 2: Clothing in Relation to Self as Process – Communication of Self to others (7 items; *df* = 14)								
F_{ULS}	NA	16.363	.001	.996	.992	.994	NA	NA
F_{ML}	72.047	NA	.001	.914	.828	.938	.949	.129
Dimension 3: Clothing in Relation to Self as Process – Response to Judgments of Others (7 items; *df* = 2)								
F_{ULS}	NA	3.400	.011	.998	.988	.995	NA	NA
F_{ML}	10.963	NA	.015	.977	.886	.971	.976	.134
Dimension 4: Clothing in Relation to Self-esteem – Evaluative Process Dominant (8 items; *df*=20)								
F_{ULS}	NA	27.011	.002	.997	.994	.995	NA	NA
F_{ML}	80.573	NA	.001	.924	.864	.939	.954	.110
Dimension 5: Clothing in Relation to Self-esteem – Affective Process Dominant (7 items; *df* = 14)								
F_{ULS}	NA	12.250	.008	.997	.995	.996	NA	NA
F_{ML}	68.554	NA	.009	.920	.841	.947	.957	.125
Dimension 6: Clothing in Relation to Body Image and Body Chathexis (5 items; *df* = 5)								
F_{ULS}	NA	10.433	.012	.996	.989	.992	NA	NA
F_{ML}	21.569	NA	.007	.966	.898	.953	.964	.115

Note. F_{ULS} = unweighted least squares estimator; F_{ML} = maximum likelihood estimator; χ^2 = chi-square estimate of overall model fit; GFI = goodness of fit index; AGFI = adjusted goodness of fit index; NFI = normed fit index; IFI = incremental fit index; RMSEA = root mean square error of approximation; NA = not applicable. N_{1+2} = 250.

PCS dimensions had been identified. Appendix K includes the covariance matrix (#1) along with the means and standard deviations.

CFA Round 2: Theoretical Pairing

The objective for Round 2 of the CFA was to examine the degree of collinearity that might exist between certain related dimensions and to eliminate any items that have cross-loading on dimensions other than that for which they were designed. This researcher paired selected dimensions that theoretically and from past might be highly correlated. These were Dimensions 1 and 2, Dimensions 2 and 3, and Dimensions 4 and 5. Sontag and Lee (2004) theoretically argue that:

> Dimensions 1 and 2 both involve self-expression; but Dimension 1 involves self-image and its expression through clothing to the self, whereas Dimension 2 involves communication of the self to others via clothing. Dimensions 2 and 3 both involve two distinct aspects of self as process involving communication of appearance to others and the response to the judgment of others. Dimensions 4 and 5 are both based on self-esteem processes – evaluative and affective process respectively (p. 12).

The 37 items retained from CFA Round 1 were the observed variables used in this Round 2, with the exception that any modification made in Dimension 2 as a result of the first pairing of Dimensions 1 and 2 would need to be made for the input to the second pairing of Dimensions 2 and 3. In evaluating model fit, the researcher paid attention to the correlation between the two latent factors, the standardized residual covariances (SRC) that might indicate correlated measurement error, and any modification index (MI) that might indicate correlated measurement error or cross-loading of one variable on a PCS factor that it was not designed to measure. In this study, when correlated measurement errors occurred, the offending variable was eliminated; when cross-loading occurred, the item that loaded on more than one factor was deleted. This is consistent

with the goal of achieving a measurement tool in which the items clearly measure only one PCS dimension. Before making a final decision of item deletions, the researcher cross-checked these items with the retained PCS items in the Sontag and Lee (2004) study.

The correlation between the two latent factors, PCS Dimensions 1 and 2, was .97 with the ULS estimator and .98 with the ML estimator, indicating a high degree of collinearity. Such high factor correlation suggests that these two factors are essentially identical and lack discriminant validity (Marsh & Grayson, 1995). Therefore, for the elderly group, these two hypothesized separate dimensions did not hold up and were combined into a single dimension. Thus, the researcher initially renamed this PCS dimension, *clothing in relation to self as structure – process I* for the elderly group. So far, this is an identical finding with the result from the adolescent group in the Sontag and Lee (2004) study.

To determine the input variables for such a combined factor, the researcher began with a single factor CFA with a full set of 13 variables (the original 6 items from PCS Dimension 1 and 7 items from PCS Dimension 2). Using elimination criteria as previously specified for Round 1, a set of seven variables was retained in this combined dimension resulting in a nonsignificant χ^2 (BS p = .102) or discrepancy function (BS p = .113). The 7 items retained were PCSD106, PCSD108, PCSD111, PCSD202, PCSD203, PCSD208, and PCSD212. All factor loadings were significantly greater than zero; standardized factor loadings ranged from .73-.84 under the ULS estimator and from .72-.84 under the ML estimator, and R^2 from .53-.70 and .53-.71, respectively. The combined dimension achieved excellent fit. Using the ULS estimator the discrepancy

function = 19.898, *df* = 14, Bollen-Stine bootstrapped $p = .113$; and GFI, AGFI, and NFI = .998, .997, and .998, respectively. For the ML estimator $\chi^2 = 32.685$, *df* = 14, Bollen-Stine bootstrapped $p = .102$; and GFI, AGFI, NFI, and IFI = .964, .928, .970, and .983 respectively; and RMSEA = .074. Because of the outcome of the combination of PCS dimensions 1 and 2 described above, the previously planned pairing of PCS Dimensions 2 and 3 was modified. The combined PCS Dimensions 1 and 2 (7 observed variables) were paired with PCS Dimension 3 (four observed variables retained from the single factor CFA).

The correlation between the two latent factors, the modified PCS dimensions 1-2 and 3 was .88 with the ULS estimator and .88 with the ML estimator, indicating a high degree of collinearity. The same criterion that was used to compare PCS dimensions 1 and 2 was applied here as well. For the elderly group, these two separate dimensions were highly correlated and were again combined into a single dimension. This researcher along with the project director of this study renamed this combined PCS dimension, the *clothing in relation to self as structure – process*. This was not an identical finding with the result from the adolescent group (Sontag & Lee, 2004). They did not combine all three dimensions into one dimension because of only a moderate correlation between combined dimension 1-2 and dimension 3. In their study, they theorized that PCS dimensions 1, 2, and 3 would stay as separate dimensions for adult groups. Interestingly, a major change in the theoretical content of PCS has occurred since the structural component and both processual components of the self would no longer be distinct.

To determine the input variables for such a combined factor (PCS Dimensions 1, 2, and 3), the researcher began with a single factor CFA with a full set of 17 variables

(the original 6 items from PCS Dimension 1, 7 items from PCS Dimension 2, and 4 items from PCS Dimension 3). Using elimination criteria as previously specified for Round 1, a set of seven variables were retained in this combined dimension resulting in a nonsignificant χ^2 (BS p = .117) and discrepancy function (BS p = .079). The 7 items retained were PCSD108, PCSD111, PCSD207, PCSD208, PCSD212, PCSD302, and PCSD313. The top half of Table 12 shows the overall model fit and goodness of fit indexes for PCS dimensions 1, 2, and 3 combined.

Table 12. *Overall Model Fit and Goodness of Fit Indexes for Selected Paired and Combined PCS Dimensions at Conclusion of Round 2 Confirmatory Factor Analysis*

Dimension/ Estimator	χ^2	Discrepancy Function	Bollen-Stine Bootstrapped p	GFI	AGFI	NFI	IFI	RMSEA
Dimension 1-2-3 combined: Clothing in Relation to Self as Structure – Process (7 items; df = 14) [a]								
F_{ULS}	NA	21.803	.079	.998	.996	.997	NA	NA
F_{ML}	30.828	NA	.117	.965	.928	.971	.984	.069
Dimension 4-5 combined: Clothing in Relation to Self-esteem – Evaluative and Affective Process (7 items; df = 14) [b]								
F_{ULS}	NA	11.705	.183	.999	.998	.999	NA	NA
F_{ML}	30.172	NA	.116	.966	.932	.978	.988	.068

Note. F_{ULS} = unweighted least squares estimator; F_{ML} = maximum likelihood estimator; χ^2 = chi-square estimate of overall model fit; GFI = goodness of fit index; AGFI = adjusted goodness of fit index; NFI = normed fit index; IFI = incremental fit index; RMSEA = root mean square error of approximation; NA = not applicable. N_{1+2} = 250.

[a] Seven items in combined PCS Dimension 1-2-3 include: PCSD108, PCSD111, PCSD207, PCSD208, PCSD212, PCSD302, and PCSD313.

[b] Seven items in combined PCS Dimension 4-5 include: PCSD402, PCSD403, PCSD406, PCSD409, PCSD506, PCSD507, and PCSD511.

All factor loadings were significantly greater than zero; standardized factor loadings ranged from .68-.85 under the ULS estimator and from .67-.86 under the ML

estimator, and R^2 from .46-.72 and .45-.73 respectively. The combined dimension achieved excellent fit. Using the ULS estimator, the discrepancy function = 21.803, *df* = 14, Bollen-Stine bootstrapped *p* = .079; and GFI, AGFI, and NFI = .998, .996, and .997, respectively. For the ML estimator χ^2 = 30.828, *df* = 14, Bollen-Stine bootstrapped *p* = .117; and GFI, AGFI, NFI, and IFI = .964, .928, .971, and .984 respectively; and RMSEA = .069.

In Sontag and Lee's (2004) qualitative survey of 190 adolescents through older adults, each age group gave statements pertaining to each of the six PCS dimensions. So analytically, these dimensions appeared to be distinct. It is possible to say that the self-system of elderly individuals works or processes more holistically than other younger age groups (i.e., adolescent group) because of their various life experiences. Although elderly individuals may have the ability to separate their structural and processual components within their self-system as evidenced by what they say about clothing in relation to the self (Sontag & Lee), they may have a greater tendency to integrate this knowledge (i.e., clothing as a component of self-image, clothing as a communication tool conveying messages of self to others, and clothing as a communication tool responding to the actual or imagined judgment of the self by others) into their daily lives.

The pairing of PCS dimensions 4 and 5 resulted in a correlation between the two latent variables of .98 for the ULS estimator and of .99 for the ML estimator. This implies that elderly individuals likely do not discriminate between evaluative and affective processes of self-esteem. This result is consistent with the findings from the Sontag and Lee (2004) study on the adolescent group although the items retained were somewhat different between these two studies.

Thus, these two dimensions were combined, beginning with a single factor CFA of 15 variables (8 items from PCS Dimension 4 and 7 items from PCS Dimension 5). A seven-item solution resulted in a nonsignificant χ^2 (BS p = .116) and discrepancy function (BS p = .183). The seven items retained were PCSD402, PCSD403, PCSD406, PCSD409, PCSD506, PCSD507, and PCSD511.

As shown in the lower half of Table 12, for the ULS estimator, the discrepancy function = 11.705, df = 14, Bollen-Stine bootstrapped p = .183; and GFI, AGFI, and NFI = .999, .998, and .999, respectively. For the ML estimator χ^2 = 30.172, df = 14, Bollen-Stine bootstrapped p = .116; and GFI, AGFI, NFI, and IFI = .966, .932, .978, and .988 respectively; and RMSEA = .068. Standardized factor loadings ranged from .76-.89 for the ULS and ML estimators, and R^2 ranged from .57-.79 for the ULS estimator and from .58-.78 for the ML estimator.

Thus, as input to the full model tests to be described below, there were a total of 19 observed variables retained as a result of Round 2. In terms of the factor structure, Round 2 led the researcher to combine PCS Dimensions 1, 2, and 3 into a single dimension named as *Clothing in Relation to Self as Structure – Process*. In addition, Round 2 resulted in the combination of Dimensions 4 and 5 into a new dimension named as *clothing in relation to self-esteem – evaluative and affective processes.*

CFA Round 3: Full Model Testing

The objectives of the last round in the CFA analysis were to assess the fit of the full multi-factor model and determine whether there is a second-order factor that accounts for the correlations among the first-order factors. If the three first-order factors correlate with each other, that means that the factors may be related to a single, general latent

construct (Hull, Tedlie, & Lehn, 1995), in this study, *proximity of clothing to self* (PCS). The researcher tested the first-order measurement model that culminated from the previous two rounds. This was a three-factor model (Dimensions 1, 2, and 3 combined; Dimensions 4 and 5 combined; and Dimension 6), with 19 observed variables, and the factors were allowed to correlate freely with each other. The input model for this analysis is given in Figure 6.

In the initial test of this first-order CFA full model using the ULS estimator, the value of the discrepancy function was 238.932, $df = 149$, and Bollen-Stine bootstrapped $p = .001$. The ML estimator resulted in a χ^2 value of 369.014, $df = 149$, and Bollen-Stine bootstrapped $p = .001$. The critical ratio for multivariate kurtosis actually decreased a small amount from Round 2 to Round 3; therefore, there was no reason not to use the ML estimator at this stage. Thus, the initial analysis resulted in a rejection of the null hypothesis implied by the model. No item had relatively high standardized residual covariance (SRC) (i.e., > 2.58). As shown in the upper half of Table 13 for the final set of 19 variables, the hypothesis that the population covariance matrix was equivalent to the covariance matrix implied by the model was rejected as shown by the significant BS p for both ML and ULS estimators.

For the ML estimator, GFI, AGFI, NFI, and IFI = .864, .827, .900, and .938 respectively; RMSEA = .077. For the ULS estimator, GFI, AGFI, and NFI = .994, .992, and .993 respectively. The goodness of fit indexes obtained with the ULS and ML estimators differed substantially. Thus, the ULS estimator, which is not based on assumptions of normality, may give the more accurate fit indexes. Both are included, however, to show that with the ML estimator, only moderately good fit was obtained;

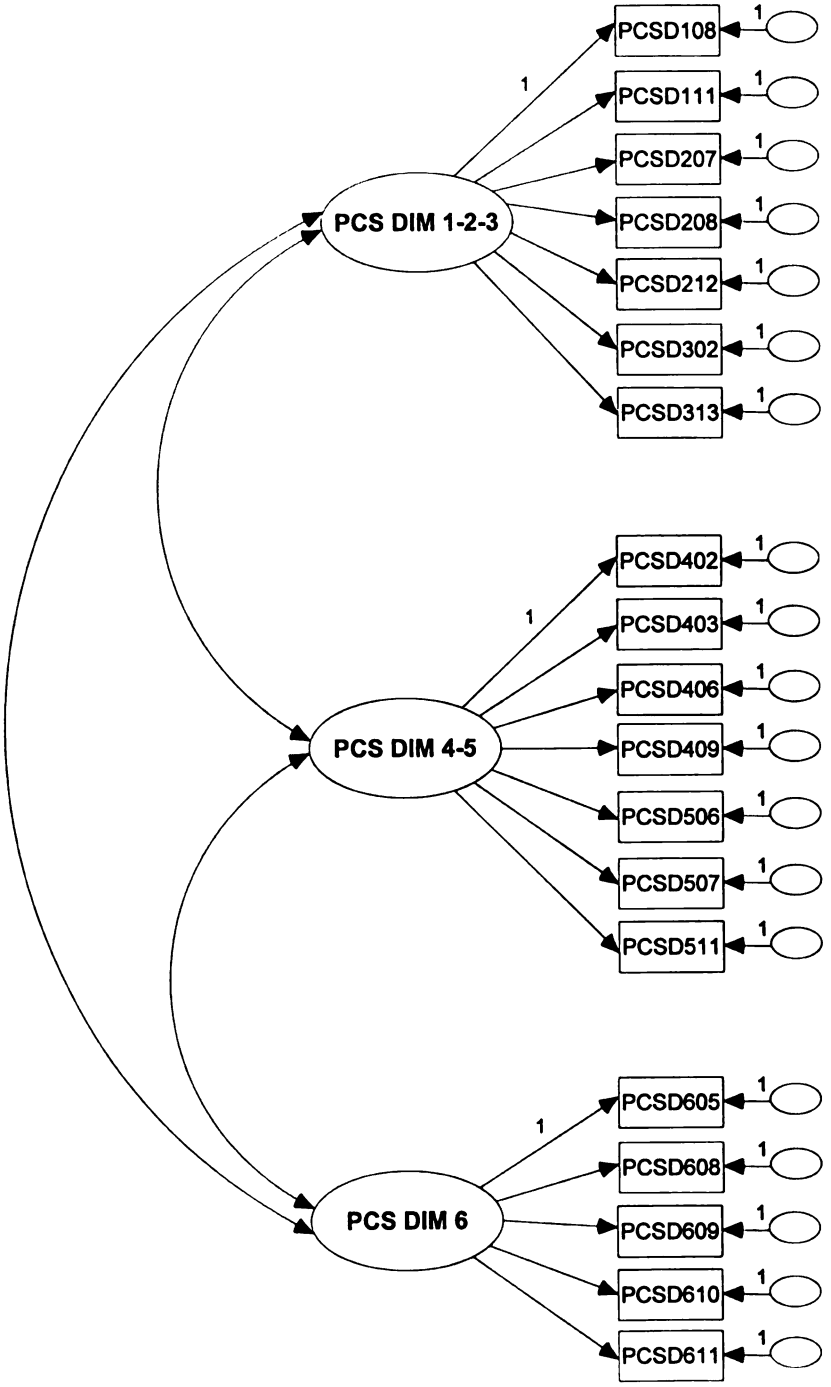


Figure 6. Input model to first-order confirmatory factor analysis for full model test.
Note. Oval directed to each indicator of the latent constructs represents the measurement error of the indicator.

Table 13. *Overall Model Fit and Goodness of Fit Indexes for First- and Second-order Confirmatory Factor Analyses at Conclusion of Round 3 Test of Full Model.*

Model/ Estimator	χ^2	Discrepancy Function	Bollen-Stine Bootstrapped *p*	GFI	AGFI	NFI	IFI	RMSEA
First-order CFA – Full Model – 19 items (*df* = 149)								
F_{ULS}	NA	238.932	.001	.994	.992	.993	NA	NA
F_{ML}	369.014	NA	.001	.864	.827	.900	.938	.077
Second-order CFA – Full Model – 19 items (*df* = 149)								
F_{ULS}	NA	239.769	.001	.994	.992	.993	NA	NA
F_{ML}	369.014	NA	.001	.864	.827	.900	.938	.077

Note. F_{ULS} = unweighted least squares estimator; F_{ML} = maximum likelihood estimator; χ^2 = chi-square estimate of overall model fit; GFI = goodness of fit index; AGFI = adjusted goodness of fit index; NFI = normed fit index; IFI = incremental fit index; RMSEA = root mean square error of approximation; NA = not applicable. $N_{1+2} = 250$.

whereas the ULS estimator resulted in very strong fit indexes. Standardized factor loadings ranged from .57-.88 for the ULS estimator and from .61-.88 for the ML estimators. R^2 ranged from .32-.78 for the ULS estimator and from .37-.78 for the ML estimator (Table 14).

Construct reliability for PCS subscales was calculated by the method in Hair, Anderson, Tatham, and Black (1995, pp. 642, 653). The procedure of calculation is illustrated below:

$$\text{Construct Reliability} = \frac{(\text{Sum of Standardized loadings})^2}{(\text{Sum of Standardized loadings})^2 + \text{sum of indicator measurement error}}$$

For the seven items in PCS Dimensions 1-2-3, construct reliability = .912; for the seven items in PCS Dimensions 4-5, construct reliability = .937; and for five variables in PCS Dimension 6, construct reliability = .843. All three dimensions achieved reliabilities

Table 14. *First-order Confirmatory Factor Analysis of Full Model: Standardized Factor Loadings and Squared Multiple Correlations for 19 PCS items, Construct Reliability, and Correlations among Factors*

Dimension #/ Variable	Dimension Name (Construct Reliability)/Item	λ_s[a]		SE[b]	Critical Ratio[b]	$R^{2,c}$	
		F_{ULS}	F_{ML}	F_{ML}	F_{ML}	F_{ULS}	F_{ML}
Dimension 1-2-3:	Clothing in Relation to Self as Structure Process (7 items); (Construct Reliability = .912)						
PCSD108	The clothes I wear help me to be who I am.	.82	.78	–	–	.67	.61
PCSD111	I am a certain type of person, and my clothes reflect that.	.72	.69	.07	11.57*	.52	.48
PCSD207	I often wear certain clothing to let people know what kind of person I am.	.78	.82	.07	13.92*	.61	.66
PCSD208	I want my clothes to make a statement about me without any need for words.	.82	.80	.08	13.75*	.67	.64
PCSD212	Through my clothing, I can show my values to others.	.80	.83	.07	14.36*	.64	.69
PCSD302	How I look in my clothing is important because I want others to accept me.	.76	.77	.07	13.03*	.57	.60
PCSD313	I'm careful in wearing certain styles or brands of clothing because they affect how people respect me.	.71	.73	.08	12.18*	.51	.53
Dimension 4-5:	Clothing in Relation to Self-esteem–Evaluative and Affective Process Dominant (8 items); (Construct Reliability = .937)						

Table 14. (cont.)

Dimension #/ Variable	Dimension Name (Construct Reliability)/Item	λ_s[a]		SE[b]	Critical Ratio[b]	$R^{2,c}$	
		F_{ULS}	F_{ML}	F_{ML}	F_{ML}	F_{ULS}	F_{ML}
PCSD402	The clothes I like to wear help me feel self-assured.	.88	.88	–	–	.78	.78
PCSD403	My self-confidence increases when I dress appropriately.	.84	.84	.05	18.22*	.71	.70
PCSD406	When I wear clothes that make me feel good, I am better able to talk with others.	.82	.80	.05	16.77*	.68	.64
PCSD409	Good quality clothes that look good on me make me feel competent.	.79	.79	.06	16.30*	.63	.63
PCSD506	Taking time to dress up gives me a feeling of pride in how I look.	.85	.86	.05	19.37*	.72	.75
PCSD507	When I look good in what I wear, I feel content with myself.	.83	.84	.05	18.45*	.69	.71
PCSD511	I feel good about myself when I have something new to wear.	.76	.76	.06	15.34*	.58	.58
Dimension 6:	Clothing in Relation to Body Image and Body Cathexis (7 items); (Construct Reliability = .843)						
PCSD605	I avoid certain styles or colors in clothing that do not enhance my body build or figure.	.67	.66	–	–	.44	.44

Table 14. (cont.)

Dimension #/ Variable	Dimension Name (Construct Reliability)/Item	λ_s[a]		SE[b]	Critical Ratio[b]	$R^{2,c}$	
		F_{ULS}	F_{ML}	F_{ML}	F_{ML}	F_{ULS}	F_{ML}
PCSD608	I wear certain clothing styles to change the way my body looks.	.79	.76	.10	10.28*	.62	.58
PCSD609	The way my clothing fits affects the way I feel about my body.	.85	.79	.10	10.54*	.72	.63
PCSD610	When I'm dissatisfied with a part of my body, I wear clothing that draws attention away from it.	.57	.61	.11	8.56*	.32	.37
PCSD611	I choose clothes that accent the parts of my body that I like.	.70	.69	.10	9.67*	.49	.48

Factor Correlations:	F_{ULS}	F_{ML}
PCSDIM1-2-3 — PCSDIM4-5	.89	.87
PCSDIM1-2-3 — PCSDIM6	.79	.81
PCSDIM4-5 — PCSDIM6	.87	.89

Note. $N_{1+2} = 250$.

[a]λ_s = standardized factor loading.

[b]Standard errors (*SE*s) and critical ratios are not computed for F_{ULS} in AMOS 5.0. Dash (–) indicates λ was set to 1.0, therefore no standard errors or critical ratios are given.

[c]R^2 = squared multiple correlation coefficient. Values range from zero to one with higher values indicative of reliable variance explained.

*Factor loading is significantly different from zero at $\alpha = .05$.

greater than .80. The researcher concludes that the final measurement model has attained satisfactory reliability, both overall for each construct as well as for each item.

Correlations among the factors, i.e., among the three confirmed PCS dimensions are also shown at the bottom of Table 14. They are all high ranging from .79-.89 under the ULS estimator and from .81-.89 under the ML estimator. The correlations between the *clothing in relation to self as structure – process* dimension (PCS DIM 1-2-3) and *clothing in relation to self-esteem* dimension (PCS DIM 4-5), and between the *clothing in relation to self-esteem – evaluative and affective processes* dimension (PCS DIM 4-5) and the *clothing in relation to body image and body cathexis* dimension (PCS DIM 6) were very strong. The correlation between the *clothing in relation to self as structure – process* (PCS DIM 1-2-3) dimension and the *clothing in relation to body image and body cathexis dimension* (PCS DIM 6) was lower than the other correlations; however, it was still high. In spite of high correlations among the three dimensions, this researcher did not combine these PCS dimensions into one because of no support or evidence from previous research or theory to combine these. These high correlations might have been achieved among the confirmed PCS subscales due in part to the wide age range used in this study.

The second-order CFA was conducted to test the structural model because a satisfactory measurement model was achieved. In a second-order model, the first-order latent factors are explained by some higher-order structure, proximity of clothing to self, in this study. The first-order endogenous factors (PCS Dimensions) are modeled as linear combinations of the second-order exogenous factor (PCS) and a unique variable for each first-order factor. The 19 endogenous observed variables are linear combinations of the first-order factors and a residual or error variable. The input model for this analysis is

given in Figure 7.

The overall model fit and goodness of fit indexes for the second-order CFA model are given in the lower half of Table 13. A comparison of the results from the first-order to second-order model shows exact correspondence in the goodness of fit indexes. The standardized factor loadings, standard errors, and squared multiple correlations were identical to those previously reported in Table 14 for the common parameters shared between the first- and second-order models. The standardized factor loadings for the first-order factors (i.e., specific PCS dimensions) on the second-order factor (i.e., PCS) and the squared multiple correlations that show the amount of variance in the first-order factors explained by the second-order factor are given in Table 15.

PCS Dimension 4-5 had the strongest factor loading, and 97% of its variance for the ULS estimator (96% for the ML estimator) was explained by PCS. Thus, for the elderly individuals, *clothing in relation to self-esteem – evaluative and affective Processes* dimension is core to their overall PCS. Under the ULS estimator, the remaining two dimensions in order were PCS Dimension 1-2-3, *clothing in relation to self as structure – process* (R^2 = .81) and PCS Dimension 6, *clothing in relation to body image and body cathexis* (R^2 = .78). Under the ML estimator, the remaining two dimensions in order were PCS Dimension 6, *clothing in relation to body image and body cathexis* (R^2 = .83) and PCS Dimension 1-2-3, *clothing in relation to self as structure – process* (R^2 = .80). These findings show that the variances of all three PCS dimensions were well explained by PCS.

In sum, completion of three rounds of the CFA using SEM has resulted in a 3-factor, 19-item PCS Scale with demonstrated construct validity and reliability for elderly

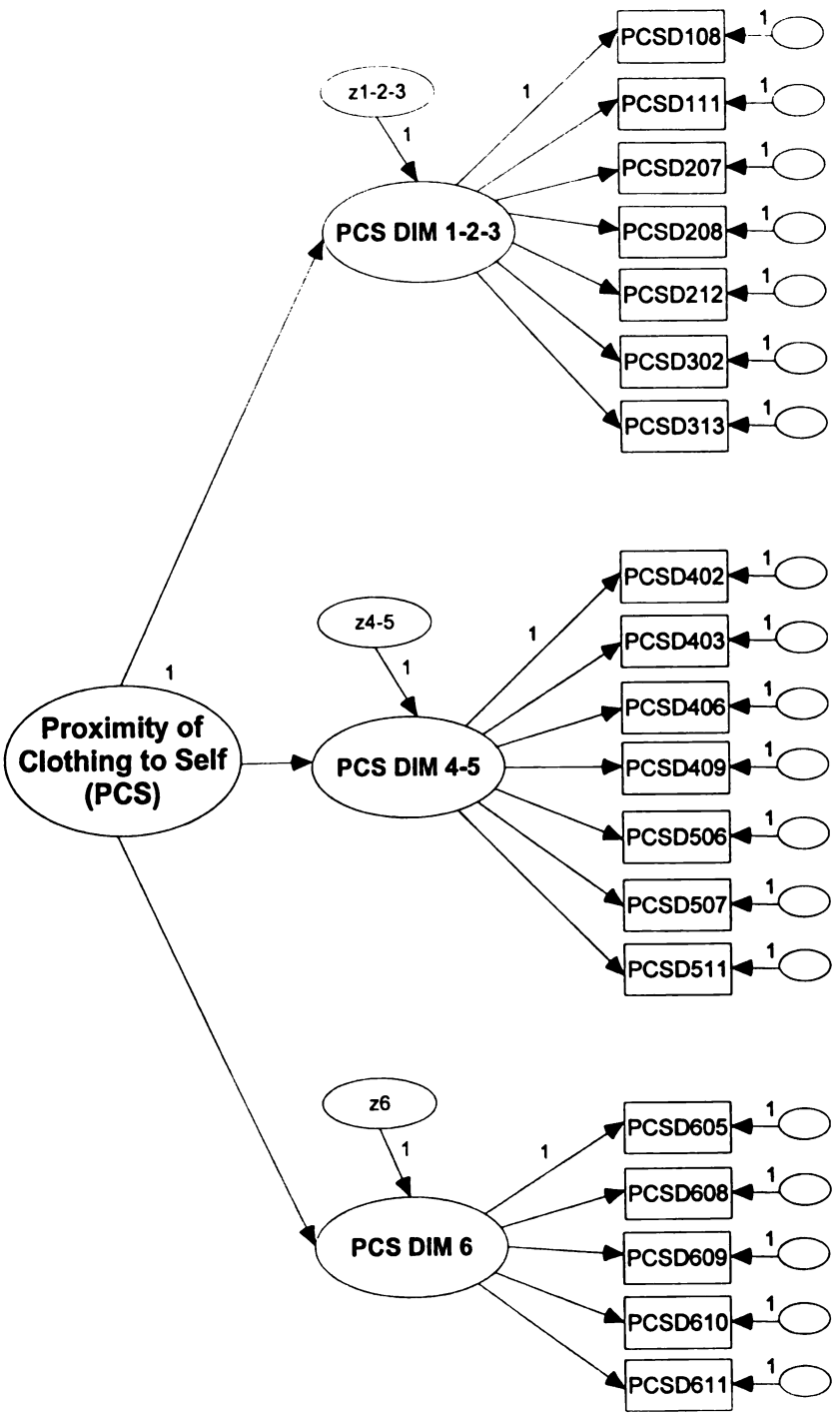


Figure 7. Input model to second-order confirmatory factor analysis for full model test. Note. z1-2-3, z4-5, and z6 are disturbances (errors) for each PCS subscale. Oval directed to each indicator of the latent constructs represents the measurement error of the indicator.

Table 15. *Standardized Factor Loadings and Squared Multiple Correlations for PCS Dimensions on Proximity of Clothing to Self for Second-order Confirmatory Factor Analysis of Round 3*

Dimension #/ Variable	Dimension Name (Number of items)	λ_s[a]		*SE*[b]	Critical Ratio[b]	$R^{2.c}$	
		F_{ULS}	F_{ML}	F_{ML}	F_{ML}	F_{ULS}	F_{ML}
Dimension 1-2-3 (PCSDIM1-2-3)	Clothing in Relation to Self as Structure Process (7 items)	.90	.89	.09	12.55*	.81	.80
Dimension 4-5 (PCSDIM4-5)	Clothing in Relation to Self-esteem–Evaluative and Affective Process Dominant (8 items)	.98	.98	.08	16.60*	.97	.96
Dimension 6 (PCSDIM6)	Clothing in Relation to Body Image and Body Cathexis (5 items)	.88	.91	.09	10.59*	.78	.83

Note. $N_{1+2} = 250$. Values for the 19 PCS individual items in the second-order CFA are identical to those reported previously in Table 15 for the first-order CFA and, therefore, are not repeated here.

[a]λ_s = standardized factor loading.

[b]Standard errors (*SE*s) and critical ratios are not computed for F_{ULS} in AMOS 5.0.

[c]R^2 = squared multiple correlation coefficient. Values range from zero to one with higher values indicative of reliable variance explained.

*Factor loading is significantly different from zero at $\alpha = .05$.

individuals who are aged 65 and over. The initially hypothesized 6-factor scale (Sontag & Lee, 2004) was not confirmed in this research on the elderly. In addition, their 4-factor solution for the adolescent group did not hold for this elderly group. The researcher anticipated the merger of PCS Dimensions 4 and 5 but did not anticipate the merger of PCS Dimensions 1, 2, and 3. This result provides the opposite explanation compared to Sontag and Lee's argument in which they proposed that PCS dimensions 1, 2, and 3 would stay as separate dimensions for adult groups because they would have a clearly developed self-image. It is possible to say that the self-system of elderly individuals goes through a more holistic process than other younger age groups. They may have a tendency to combine the structure and process dimensions rather than separating them because of their various life experiences.

This researcher hoped to maintain the same items of the PCS Scale for the elderly group as the items obtained for the adolescent group (Sontag & Lee, 2004) in order to use this scale across different age ranges. However, this study shows that some PCS items under the subscales performed differently for different age groups. For example, PCSD105, "what I wear is consistent with who I am," PCSD 106, "my clothing is a part of me, not just a simple possession," and PCSD 211, "what I wear and the way I wear it shows others my attitudes," were not in the PCS Dimension 1-2-3, *clothing in relation to self as structure – process*, for the elderly group. These items were included in the final set of items in the 4-factor solution PCS Scale for the adolescent group. PCSD111, "I am a certain type of person, and my clothes reflect that," which was not in the final set of items for the adolescent group, was in the PCS Scale for the elderly group. Only two of the four items of original Dimension 3, PCSD 302 and PCSD 313 (i.e., "how I look in my

clothing is important because I want others to accept me," and "when I feel good about what I am wearing, then I have confidence in myself"), were included in the combined PCS Dimension 1-2-3. Under PCS Dimension 4-5, *clothing in relation to self-esteem – evaluative and affective processes*, PCSD402, "The clothes I like to wear help me feel self-assured," was retained for the elderly group rather than PCSD413, "when I feel good about what I am wearing, then I have confidence in myself," that was retained for the adolescent group. In addition, PCSD507, "when I look good in what I wear, I feel content with myself," is retained for the elderly group rather than PCSD508, "when I look good in my clothes, I feel good about myself," which was retained for the adolescent group. It appears that arriving at a single uniform PCS Scale for use across the lifespan is not an achievable objective as was hoped by Sontag and Lee (2004), and evidence also suggests that the factor structure of the PCS Scale changes with human development.

Structural Equation Modeling: Conceptual Model Test

The second objective of this study was to develop and test a theoretical model that explained how elderly individuals might age successfully by fulfilling the need for self-actualization by incorporating a primary resource environment, i.e., clothing, into their self-system. Under research objective one, the researcher confirmed the 3-factor solution of the PCS Scale for the elderly group. This confirmed 3-factor solution was used within the structural equation model for objective two.

As already mentioned in Chapter III, the structural equation model in this study was a recursive model that had only unidirectional paths and no feedback loops, in both the measurement model and structural model. Figure 8 presents the initial structural equation model including both measurement and structural parts. In this study, three

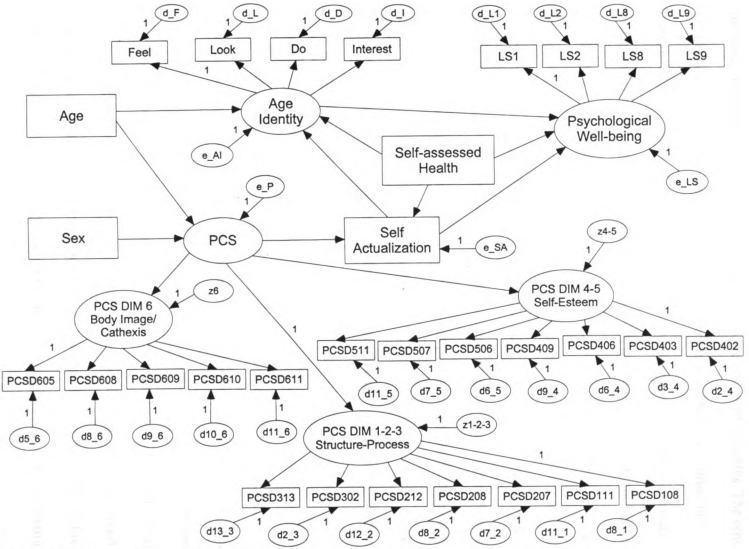


Figure 8. The initial structural equation model: Both measurement and structural parts ($N_1 = 195$).

exogenous variables (i.e., age, sex, and self-assessed health) and four endogenous variables (i.e., PCS, age identity, self-actualization, and psychological well-being) were included. Two exogenous variables, age and sex, were observed variables. The other exogenous variable, self-assessed health, was an unobserved latent construct but considered as an observed variable because of using only one indicator to measure this construct. Three endogenous variables, that is, PCS, age identity, and psychological well-being, were latent constructs; and one endogenous variable, that is, self-actualization, was considered as an observed variable because of using only one indicator to measure this construct. Three sub-latent factors existed under PCS. Each PCS dimension (PCS Dimension 1-2-3, PCS Dimension 4-5, and PCS Dimension 6) has 7, 7, and 5 indicators (observed variables), respectively. Age identity and psychological well-being include 4 and 4 indicators, respectively. In this initial model, all exogenous variables (i.e., age, sex, and self-assessed health) were assumed to be uncorrelated. Also, it was assumed that there was no covariance between the disturbances or measurement errors of each endogenous variable.

If the variables in this data set were normally distributed and satisfied the normality assumption, the chi-square fit test and various fit indexes [i.e., goodness of fit index (GFI), adjusted goodness of fit index (AGFI), normed fit index (NFI), incremental fit index (IFI), and root mean square error of approximation (RMSEA)] could be used to test overall fit of the model under maximum likelihood estimation. However, Mardia's test for multivariate kurtosis brought to attention that the observed variables in this model were not multivariate normal. To correct this problem minimally, the ML estimator using bootstrapping was used to obtain a corrected value of the probability for the chi-square

statistic, i.e., the Bollen-Stine bootstrapped *p* (Bollen & Stine, 1993). The ULS estimator was not used in this theoretical model test because (1) the critical ratio of multivariate kurtosis did not increase considerably in spite of adding observed variables to the model and (2) this estimator does not provide modification indices which are one way to improve the model fit. Standardized residual covariances and modification indices were carefully examined to improve the model fit. Although these modification indices might suggest additional paths and several covariances between disturbances, the model was not modified if these suggestions were not consistent with the proposed substantive theory. In addition, to test the hypotheses, the statistical significance of path coefficients was examined as well as variances of the endogenous variables.

AMOS 5.0 was employed to conduct a structural equation model test using a two stage analysis that utilized the ML estimator with bootstrapping. This researcher first tested the measurement model for each latent construct by CFA on multi-item scales (i.e., PCS, age identity, and psychological well-being) to determine whether the measurement model was adequate to test the structural path model. Also, correlations among each observed variable in the model were carefully examined to see whether collinearity existed among the variables. In this section, the researcher only reports the results of the measurement model test of two latent constructs, i.e., age identity and psychological well-being along with the result of a full measurement model test. The test of the measurement model for PCS was reported in the previous section.

Summary Statistics for the Variables

As already discussed in the earlier part of this chapter, the age of elderly respondents ranged from 65 years to 94 years. The respondents consisted of 61% females

and 39% males. More specific characteristics of the respondents were presented in Table 7.

The confirmed 3-factor solution of the PCS Scale was used for the model test. The means and standard deviations of the respondents' mean score on each of the three confirmed subscales of PCS were not reported before; therefore, Table 16 shows these statistics for the 195 respondents used in the SEM test of the conceptual model. Table 17 shows these statistics for the 250 respondents used in the CFA for the PCS Scale. The latter is presented here only for the purpose of comparison with Table 16. Similar mean scores and patterns were found between these two tables with a minor difference in the pattern for men, aged 75 to 84.

With respect to Table 16, paired-samples t-tests revealed a significant difference between the means of the confirmed PCS subscales for the total sample and the sample grouped by sex. For the total sample the mean of the *clothing in relation to self-esteem* subscale (PCS Dimension 4-5) was highest, followed by the *clothing in relation to body image and body cathexis* subscale (PCS Dimension 6) and the *clothing in relation to self as structure – process* subscale (PCS Dimension 1-2-3). The combined PCS Dimension 1-2-3 had the lowest mean score among the 3 PCS subscales. The standard deviations of the individuals' mean scores on each subscale are all between 1.29 and 1.35, indicating considerable variation among individuals. This ordered pattern was true for all females but for all males, the second-highest subscale was the *clothing in relation to self as structure – process* subscale followed by the *clothing in relation to body image and body cathexis* subscale. Male respondents were much less likely to use clothing for creating or changing their mental image of the body or their feelings toward the body than were

Table 16. *Means and Standard Deviations of the Participants' Mean Scores on Each Subscale of PCS for Different Age Categories* ($N_1 = 195$)

PCS Subscale	Total ($N_1 = 195$) Mean (SD)	Female ($N_F = 119$) Mean (SD)				Male ($N_M = 76$) Mean (SD)			
		65 to 74 (n = 47)	75 to 84 (n = 52)	85 and over (n = 20)	All Female Respondents	65 to 74 (n = 43)	75 to 84 (n = 25)	85 and over (n = 8)	All Male Respondents
Dim1-2-3 Structure – Process	3.18 (1.31)	2.96 (1.18)	3.63 (1.31)	3.61 (1.21)	3.36* (1.28)	2.67 (1.34)	3.20 (1.18)	3.18 (1.50)	2.90* (1.31)
Dim 4-5 Self-esteem	3.94 (1.35)	3.87 (1.27)	4.60 (1.06)	4.64 (1.26)	4.32* (1.23)	3.10 (1.39)	3.62 (1.15)	3.95 (1.26)	3.36* (1.33)
Dim 6 Body Image/ Cathexis	3.58 (1.29)	4.01 (1.08)	4.29 (.99)	4.21 (1.07)	4.17* (1.04)	2.40 (1.02)	3.09 (1.07)	2.80 (1.34)	2.67* (1.11)

Note. The possible range of mean scores is 1 to 6 on each subscale. An underline indicates a significant difference between the means at the .05 level using ANOVA and Scheffé post hoc comparisons. A vertical bracket indicates a significant difference between two means at the .05 level using paired-samples t-test. For each PCS subscale (i.e., horizontal row), an asterisk (*) next to the two means for *all female respondents* and *all male respondents*, respectively indicates a significant difference at the .05 level using analysis of variance.

Table 17. *Means and Standard Deviations of the Participants' Mean Scores on Each Subscale of PCS for Different Age Categories* ($N_{1+2} = 250$)

PCS Subscale	Total (N = 250) Mean (SD)	Female ($N_F = 150$) Mean (SD)			Male ($N_M = 100$) Mean (SD)		
		65 to 74 (n = 63)	75 to 84 (n = 65)	85 and over (n = 22)	65 to 74 (n = 60)	75 to 84 (n = 30)	85 and over (n = 10)
Dim1-2-3 Structure – Process	3.19 (1.30)	3.12 (1.25)	3.67 (1.33)	3.54 (1.22)	2.70 (1.25)	3.02 (1.16)	3.34 (1.38)
Dim 4-5 Self-esteem	3.94 (1.34)	3.99 (1.26)	4.61 (1.07)	4.64 (1.20)	3.09 (1.30)	3.50 (1.19)	4.15 (1.20)
Dim 6 Body Image/ Cathexis	3.55 (1.28)	4.01 (1.06)	4.21 (1.04)	4.24 (1.04)	2.46 (1.00)	3.06 (1.15)	2.92 (1.24)

Note. The possible range of mean scores is 1 to 6 on each subscale.

females and this ordered pattern was stable across age categories for men.

ANOVA and Scheffé post hoc comparisons show that the mean scores of the PCS subscales of all females were significantly higher than those for all males. Other research literature (Lynn, 1990) confirmed that the female elderly have higher psychologically closeness of clothing to self than the male elderly.

Results of paired-samples t-tests revealed significant differences between the means of PCS subscales within an age category. In the female age groups, the mean score of the *clothing in relation to self-esteem – evaluative and affective processes* subscale was highest for two different age categories (i.e., 75 to 84 years and 85 years and over) followed by the *clothing in relation to body image and body cathexis* subscale and the *clothing in relation to self as structure process* subscale. However, the *clothing in relation to body image and body cathexis* subscale had the highest mean score for women

aged 65 to 74 years, followed by the *clothing in relation to self-esteem* subscale and the *clothing in relation to self as structure – process* subscale. However, the difference between the means of PCS Dimension 4-5 and Dimension 6 for this age group was not significant.

It is possible to say that relatively high increases in PCS level for women began when they reached 75. Results of analysis of variance indicated significant differences of the means for women between 65 to 74 years and 75 to 84 years for both PCS Dimension 1-2-3 and PCS Dimension 4-5. However, the mean scores of PCS Dimension 6 for women were similar across different age categories. This suggests the fairly stable importance of clothing to body image/cathexis across age categories to women. No significant differences in means of any PCS subscale were found for women between age 75 to 84 years and 85 years and over.

Among all male elderly, the *clothing in relation to self-esteem* subscale had the highest mean score, followed by the mean score of the *clothing in relation to self as structure – process* subscale and the *clothing in relation to body image and body cathexis* subscale. Results of paired-samples t-tests revealed significant differences among the means of these PCS subscales.

For male respondents, analysis of variance showed significant difference by age category in the means for PCS Dimension 6. Scheffé post hoc comparison indicated that males aged 75 to 84 years had higher PCS scores on PCS Dimension 6 than those aged 65 to 74 years. No significant difference across age ranges for PCS Dimensions 1-2-3 or 4-5 was found.

With respect to age identity, in Table 18, for female and male elderly respondents,

Table 18. *Means and Standard Deviations of the Participants' Scores on Each Item of Cognitive Age Scale for Different Age Categories*

Cognitive Age Scale	Total (N_1 = 195) Mean (SD)	Female (N_F=119) Mean (SD)				Male (N_M = 76) Mean (SD)			
		65 to 74 (n = 47)	75 to 84 (n = 52)	85 and over (n = 20)	All Female Respondents	65 to 74 (n = 43)	75 to 84 (n = 25)	85 and over (n = 8)	All Male Respondents
Overall Age Identity	57.62 (10.46)	51.38 (9.68)	61.25 (8.17)	65.38 (7.84)	58.05 (10.32)	52.73 (8.99)	61.30 (10.16)	67.19 (9.11)	56.94 (10.71)
I feel...	57.64 (14.05)	50.64 (13.74)	61.73 (11.84)	67.00 (13.80)	58.24 (14.36)	52.73 (13.87)	61.20 (11.66)	66.25 (9.16)	56.71 (13.60)
I look...	60.92 (9.69)	55.75 (8.53)	63.46 (6.83)	68.00 (9.51)	61.18 (9.22)	56.59 (9.63)	64.80 (8.72)	68.75 (9.91)	60.53 (10.44)
I do...	57.33 (13.40)	50.00 (12.85)	61.15 (10.22)	67.50 (12.51)	57.82 (13.41)	52.50 (12.60)	59.60 (11.36)	68.75 (14.58)	56.58 (13.42)
My interests are...	54.56 (12.69)	49.15 (12.13)	58.65 (11.03)	59.00 (12.94)	54.96 (12.61)	49.09 (10.96)	59.60 (13.06)	65.00 (9.26)	53.95 (12.87)

Note. The possible range of mean scores would be 20s to 90s on each item. An underline indicates a significant difference between two means at the .05 level using Scheffé post hoc comparisons. Where the underline extends under three means the significant difference is between the two end means. A vertical bracket indicates a significant difference between the means at the .05 level using paired-samples t-test.

the mean scores of overall age identity were 58.05 and 56.94, respectively. Results of analysis of variance revealed that no difference was found by sex. A similar pattern was observed for the different age categories of the female and male groups.

A comparison of total mean scores among each of the four individual measures of the Cognitive Age Scale show that *look* age had the highest mean score followed by *feel*, *do*, and *interest* age. Elderly respondents had a tendency to maintain or hold the interests that they have had when they were younger than their current age. However, they looked or viewed themselves closer to their chronological age. *Feel* and *do* generally fell between the *look* and *interest* ages across the three age categories. Results of paired-samples t-tests for all respondents showed significant differences for the means between each Cognitive Age Scale item except for the means between *feel* age and *do* age. Results of analysis of variance indicated that no significant differences existed by sex for the individual Cognitive Age Scale items.

Results of analysis of variance indicated that significant differences existed across age groups for means of overall age identity and of the Cognitive Age Scale items. Scheffé post hoc comparisons revealed significant differences in age identity of elderly individuals between 65 to 74 years and 75 to 84 years, and between 65 to 74 years and 85 years and over. No significant difference in age identity of elderly individuals between 75 to 84 years and 85 years and over was found. The mean score of the respondents' overall age identity under the age category of 75 to 84 years increased approximately 10 years compared with those aged 65 to 74 years, and this difference was significant for both males and females. The mean score of the respondents' overall age identity for those 85 years and over was four (for females) to six (for males) years greater than those aged 75

to 84 years, but this difference was not significant. This pattern was similar across all four items of age identity, as well for both males and females. The respondents who were aged 75 to 84 years might be going through more serious physical health changes than those aged 65 to 74 years. Because of these changes or other life transitions, their age identity (i.e., their perception of their chronological age) might increase to a great degree. After going through an adaptive process, they might accept such changes more smoothly. Thus, their perceived age increased non-significantly when they reach aged 85 years and over.

The overall score of the POI, a measure of self-actualization, was used for the model test. The means and standard deviations of the respondents' scores by sex and for different age categories for the 195 respondents are shown in Table 19. Results of analysis of variance showed no significant difference in self-actualization by sex. Results of analysis of variance indicated that significant differences existed between means across age ranges for self-actualization of female elderly. Scheffé post hoc comparisons showed significantly higher self-actualization for women between 65 to 74 years than for those 75 to 84 years, and between 65 to 74 years and 85 years and over. For male elderly, results of analysis of variance did not reveal significant differences across age ranges.

Table 20 shows the aggregate means and standard deviations for the remaining variables as well as the scale range used by the subjects for the variables. Simple statistics and covariance matrices of the variables used in the structural model test are reported in Appendix K, matrices #2, 3, and 4.

Measurement Model for Cognitive Age Scale and Life Satisfaction Index

An initial series of CFA that utilized the ML estimation with bootstrapping were

Table 19. *Means and Standard Deviations of the Participants' Scores on Overall Self-actualization by Sex and for Different Age Categories* (N_1 = 195)

Sex	Overall Self-actualization by Chronological Age Category, Mean (SD)			
	65 to 74	75 to 84	85 and over	All respondents
Female (N_F=119)	102.21	94.77	92.00	97.24
	(14.56)	(11.14)	(9.59)	(12.97)
Male (N_M = 76)	97.23	101.00	89.25	97.58
	(11.71)	(12.84)	(7.67)	(12.17)

Note. The possible range of mean scores on overall self-actualization is 1 to 150. An underline indicates a significant difference between two means at the .05 level using Scheffé post hoc comparisons. Where the underline extends under three means the significant difference is between the two end means.

Table 20. *Aggregate Means, Standard Deviations, and Ranges for Selected Variables* (N_1 = 195)

Variable name	Mean	Standard Deviation	Minimum	Maximum
Age Identity				
I Feel	57.64	14.05	20	90
I Look	60.92	9.69	30	90
I Do	57.33	13.40	20	90
My Interests	54.56	12.69	20	90
Self-actualization	97.37	12.63	52	129
Self-assessed Health	7.67	1.83	1	10
Psychological Well-being [a]				
LSIZ 1	3.51	1.27	1	5
LSIZ 2	3.16	1.25	1	5
LSIZ 8	3.44	1.23	1	5
LSIZ 9	3.95	1.03	1	5
Valid N (listwise deletion)	195			

[a] Means and standard deviations of all 13-items of LSIZ are included in Appendix K, covariance matrix #3.

used to test the measurement model using *AMOS 5.0*. Construct reliability for Cognitive Age Scale and Life Satisfaction Index was calculated by the method in Hair, et al. (1995, pp. 642, 653).

Cognitive Age Scale (CAS). Age identity was measured by using the Cognitive Age Scale with the four indicators of *feel, look, act,* and *interests* as developed by Barak and Schiffman (1981). CFA was performed to assess the unidimensionality of the scale. After unidimensionality of the scale was established, reliability could then be assessed. Correlations among items were checked to detect any excessive collinearity (>.85) among the four items. Correlations ranged from .546 to .642; therefore, no correlation over .85 was found. The covariance matrix of Cognitive Age Scale along with the means and standard deviations is included in Appendix K, matrix #2.

In the process, standardized factor loadings of the four indicators for the construct achieved optimum chi-square values for an adequate model fit. Table 21 reports the results of the measurement model, showing for each item retained the values of the standardized factor loading, standard error, and squared multiple correlation coefficient; for the Cognitive Age Scale construct reliability along with the overall model fit and goodness of fit indexes are also reported. All factor loadings were significantly greater than zero; standardized factor loadings ranged from .74 to .85; and R^2 ranged from .55 to .72.

Overall model fit did achieve a nonsignificant test result of the null hypothesis for the age identity construct (χ^2 of 1.514; $df = 2$; Bollen-Stine bootstrapped $p = .629$); the goodness of fit indexes were excellent having .996 for GFI, .980 for AGFI, .996 for GFI, .987 for RFI, and .000 for RMSEA. Construct reliability resulted for the four items

in the Cognitive Age Scale was .860. Completion of the CFA demonstrated construct validity and reliability of this scale for the elderly group. CAS including the four indicators was further used in testing the structural path model.

Table 21. *Cognitive Age Scale: Measurement Model Test Results*

	Cognitive Age Scale (Construct Reliability[a] = .860)			
Indicator	λ_s[b]	*SE*[c]	Critical Ratio[c]	$R^{2,d}$
I Feel	.76	.14	10.25*	.58
I Look	.76	–	–	.57
I Do	.85	.14	11.12*	.72
My Interests	.74	.13	9.92*	.55
	$\chi^2 = 1.514$;	$Df = 2$		
	GFI	= .996		
	AGFI	= .980		
	NFI	= .996		
	RFI	= .987		
	IFI	= 1.00		
	RMSEA	= .000		
	χ^2/df	= .757		

Note. $N_1 = 195$; χ^2 = chi-square estimate of overall model fit; GFI = goodness of fit index; AGFI = adjusted goodness of fit index; NFI = normed fit index; IFI = incremental fit index; RMSEA = root mean square error of approximation.

[a]Construct reliability was computed by the method in Hair, Anderson, Tatham, & Black (1995, pp. 642, 653).

[b]λ_s = standardized factor loading.

[c]*SE*= Standard error. Dash (–) indicates λ was set to 1.0, therefore no standard error or critical ratio is given.

[d]R^2 = squared multiple correlation coefficient. Values range from zero to one with higher values indicative of reliable variance explained.

*Factor loading is significantly different from zero at $\alpha = .05$.

Life Satisfaction Index (LSIZ). Psychological well-being, one component of successful aging, was measured using the13-items of Life Satisfaction Index (LSIZ).

CFA was performed to assess the unidimensionality of the scale. After unidimensionality of the scale was established, reliability could then be assessed. Correlation of each item was checked to determine if excessive collinearity (>.85) existed among the 13 items. Correlations among the items ranged from -.003 to .616; therefore, no correlation over .85 was found. The covariance matrix of 13 items of LSIZ along with the mean and standard deviation is included in Appendix K, matrix #3.

It was necessary to retain a best set of observed variables for the psychological well-being construct such that the standardized factor loading of an item on the hypothesized psychological well-being latent factor was high, the variance explained by each item (R^2) was high, and the χ^2 for the bootstrap ML estimator was nonsignificant. For this construct, a measurement model was used that postulated one latent factor, psychological well-being, having direct effects on 13 observed variables; and each observed variable had an uncorrelated error of measurement.

In this initial measurement model for the psychological well-being construct, the χ^2 was significant ($df = 65$; Bollen-Stine bootstrapped $p = .001$). The χ^2 was 221.037 with fit indices of .832 for GFI, .764 for AGFI, .703 for NFI, .643 for RFI, .770 for IFI, and .111 for RMSEA. As an initial step to reduce the number of items, the researcher checked whether any item had an R^2 less than .35 and a standardized factor loading less than .60. All five reverse-coded items (i.e., LS3, LS4, LS5, LS11, and LS12) performed badly. A total of eight items, including the five above plus LS6, LS7, and LS13, were eliminated. For all these items, standardized factor loadings and R^2 ranged from .30 to .51 and from .09 to .26, respectively. Standardized residual covariances (SRC) also were examined when making a decision about item deletions. Values greater than 2.58 are

considered large (Byrne, 2001) so this criterion was used in making deletion of items.

After the deletion of the items that didn't perform well, the χ^2 for the bootstrap ML estimator of this revised measurement model was significant ($df = 5$; Bollen-Stine bootstrapped $p = .001$). The χ^2 was 53.806 with .900 for GFI, .701 for AGFI, .841 for NFI, .683 for RFI, .854 for IFI, and .224 for RMSEA. To gain a nonsignificant χ^2 value and improve the fit of this measurement model, the researcher eliminated item LS10 which had the lowest standardized factor loading and R^2 among the five retained items. In this process, standardized factor loadings of the four indicators for the construct, psychological well-being, achieved optimum chi-square values for an adequate model fit.

Table 22 reports the results of the measurement model, showing for each item retained the values of the standardized factor loading, standard error, and squared multiple correlation coefficient; Construct reliability along with the overall model fit and goodness of fit indexes are also reported. All factor loadings were significantly greater than zero; standardized factor loadings ranged from .52 to .82; and R^2 ranged from .28 to .68. One item (i.e., LS9) under this construct had an R^2 less than .35 and a standardized factor loading less than .60, but this researcher decided to maintain this item in the measurement model because overall model fit did achieve the nonsignificant test result of the null hypothesis for the psychological well-being construct (χ^2 of 1.793; $df = 2$; Bollen-Stine bootstrapped $p = .497$).

The goodness of fit indexes were excellent with .995 for GFI, .977 for AGFI, .992 for NFI, .976 for RFI, 1.00 for IFI, and .000 for RMSEA. Construct reliability for the four items of LSIZ was .786. Completion of the CFA demonstrated construct validity and reliability of this scale for the elderly group. Only the four indicators of LSIZ (i.e., LS1,

LS2, LS8, and LS9) were further used in testing the structural path model.

Table 22. *Life Satisfaction Index (LSIZ): Measurement Model Test Results*

LSIZ (Construct Reliability[a] = .786)					
Item #	Item	λ_s[b]	*SE*[c]	Critical Ratio[c]	R^2[d]
LS1	I am just as happy as when I was younger.	.73	.10	9.00*	.54
LS2	These are the best years of my life.	.82	–	–	.68
LS8	As I grow older, things seem better than I thought they would be.	.68	.09	8.50*	.46
LS9	As I look back on my life, I am fairly well satisfied.	.52	.08	6.68*	.28

χ^2 = 1.793;	*Df* = 2;	BS *p* = .497
GFI	= .995	
AGFI	= .977	
NFI	= .992	
RFI	= .976	
IFI	= 1.00	
RMSEA	= .000	
χ^2/df	= .897	

Note. N_1 = 195; χ^2 = chi-square estimate of overall model fit; GFI = goodness of fit index; AGFI = adjusted goodness of fit index; NFI = normed fit index; IFI = incremental fit index; RMSEA = root mean square error of approximation.

[a]Construct reliability was computed by the method in Hair, Anderson, Tatham, & Black (1995, pp. 642, 653).

[b]λ_s = standardized factor loading.

[c]*SE*= Standard errors. Dash (–) indicates λ was set to 1.0, therefore no standard error or critical ratio is given.

[d]R^2 = squared multiple correlation coefficient. Values range from zero to one with higher values indicative of reliable variance explained.

*Factor loading is significantly different from zero at α = .05.

Overall measurement model. After testing the measurement model for each latent construct (PCS, age identity, and psychological well-being), these measurement models were tested by analyzing covariance among all seven latent constructs (i.e., PCS

Dimension 1-2-3, PCS Dimension 4-5, PCS Dimension 6, Age Identity, Self-assessed health, Self-actualization, and Psychological well-being) that had 29 observed variables. One hundred and nine of 435 *df* were used to estimate the parameters. Again, the two latent constructs, self-assessed health and self-actualization, only had one indicator so were considered as observed variables. Figure 9 presents the overall measurement model.

The χ^2 of 573.986 for the bootstrap ML estimator of this overall measurement model was significant (*df* = 358; Bollen-Stine bootstrapped $p = .021$). In spite of each construct being reliable, the fit measure for this CFA model with the above 7 constructs was not sufficient to fit the data, having GFI of .835, AGFI of .800, NFI of .852, RFI of .832, IFI of .938, and RMSEA of .056.

Correlation between each construct was carefully checked to determine whether there would be any concern in terms of collinearity. Correlations among all three PCS subscales were high, that is, over .81, and were significant. However, these subscales were under the higher latent construct, PCS, when testing the structural part of the model. Therefore, this was not of concern. Standardized residual covariances (SRC) also were examined, and no values greater than 2.58 appeared in this CFA model test. Modification indices suggested putting direct paths and covariances among disturbances, latent constructs, and indicators across various constructs. However, no outstanding large values were found in the modification indices. No changes were made based on these suggestions. This researcher decided not to modify the model based on theoretical grounds even if this decision might lead to inadequate fit for the structural path model.

Testing the Structural Path Model.

The structural path model was then tested through the use of *AMOS 5.0*. Model fit

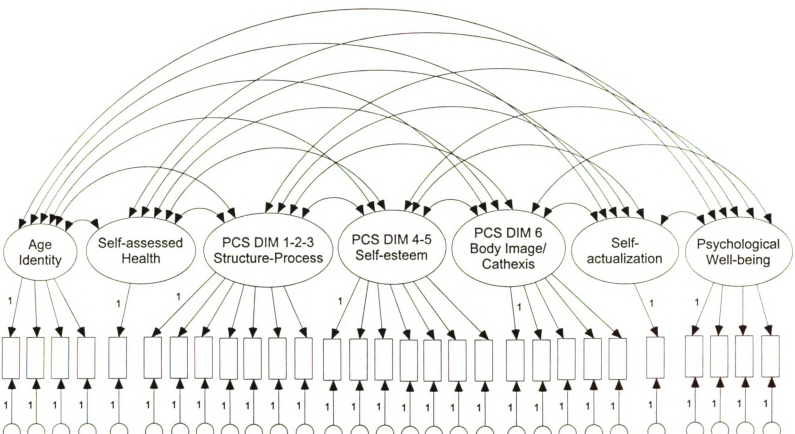


Figure 9. Overall measurement model for seven latent constructs (N_1 = 195).

was assessed through the use of multiple criteria, as recommended by Bollen (1989). Thus, while the chi-square value suggested a lack of fit of the model, other fit indexes (i.e., GFI, AGFI, NFI, RFI, IFI, and RMSEA) were examined. Figure 8 showed the initial structural equation model that included both measurement and structural parts.

The results of structural equation modeling obtained for the initial/theoretical model revealed a χ^2 of 755.490 (df = 425; Bollen-Stine bootstrapped p = .002), GFI of .800, AGFI of .767, NFI of .818, RFI of .801, IFI of .912, RMSEA of .063, and χ^2/df of 1.778. The 111 parameters were estimated from 496 available df, having 31 observed variables, zero covariance, 3 variances of exogenous variables, 34 variances from disturbances and measurement errors, and 43 paths. All relationships proposed by the initial model were significant ($p < .10$) except for the path from self-actualization to age identity. The ratio of chi-square to degrees of freedom (i.e., 1.778) was within the recommended acceptable level (value less than 3). The value of RMSEA was less than .10. However, several indicators of model fit such as GFI, AGFI, NFI, and RFI were not indicative of strong goodness of fit. In addition, value of root mean square residual (RMR) was too high (1.691). Therefore, it was deemed that the data did not fit the initial model reasonably well.

Modification indices were carefully examined to improve the model fit. Table 23 shows selected modification indices having large values from the AMOS output. The modification indices suggested addition of paths and several covariances between disturbances or measurement errors. Upon careful consideration with the proposed substantive theory, no major modifications were made on the direct paths of sex to the following three variables: PCS Dimension 1-2-3, PCS Dimension 6, and PCSD610.

Table 23. *Modification Indices for the Initial Structural Equation Model*

Covariance and Regression Weight			Values of Modification Index
Covariances:			
z6	↔	Sex	**33.187**
z1-2-3	↔	Sex	**17.560**
d10_6	↔	Sex	18.815
d11_6	↔	d10_6	**13.582**
d12_2	↔	d7_2	**14.940**
Regression weights:			
PCS DIM 6	←	Sex	33.187
PCS DIM 1-2-3	←	Sex	17.560
PCSD610	←	Sex	26.123
Age Identity	←	Self-actualization	β_s = .02 (p = **.750**)

Note. N_1 = 195.

Minor changes were made to include covariances between the following variables: (a) disturbance (z6) of PCS DIM 6 and the exogenous variable, sex; (b) disturbance (z1-2-3) of PCS DIM 1-2-3 and the exogenous variable, sex; (c) measurement error (d11_6) of PCSD111 and d10_6 of PCSD610; and (d) measurement error (d12_2) of PCSD212 and measurement error (d7_2) of PCSD207. In addition, the path from self-actualization to age identity was dropped from the initial model because of non-significant p value of .750.

The first-tested model (Model 1) was modified through two stages. First, the top-down hierarchical model (Model 2) was made to drop the path of self-actualization on age identity from the initial model. In this model, 110 parameters were estimated, having 31 observed variables, zero covariances, 3 variances of exogenous variables, and 34 variances from disturbances and measurement errors, and 42 paths. This modified structural model didn't indicate any improved fit, producing GFI of .800, AGFI of .767,

NFI of .818, RFI of .802, IFI of .912, RMSEA of .063, RMR of 1.561; and χ^2 of 755.587 (426 *df*) was still significant (Bollen-Stine bootstrapped $p = .002$). The values from various fit indices were almost the same as the initial model. However, the ratio (χ^2/df) of 1.774 (< 3.0) indicated a good model fit.

For the next step, four covariances were inserted in the above modified model based on the suggestions from the modification indices. At this time, 114 parameters were estimated, having 31 observed variables, four covariances, three variances of exogenous variables, 30 variances from disturbances and measurement errors, and 46 paths. This modified model (Model 3) indicated an improved fit in spite of not having evidence of good fit from several fit indexes, producing GFI of .828, AGFI of .798, NFI of .841, RFI of .825, IFI of .936, RMSEA of .054, and RMR of 1.540. The χ^2 of 661.086 (422 *df*) was significant (Bollen-Stine bootstrapped $p = .022$) and the ratio (χ^2/df) of 1.567 (< 3.0) indicated overall good model fit.

Several indicators of model fit improvement are shown in Table 24. For instance, GFI, AGFI, NFI, RFI, and IFI improved from .800 to .828, from .767 to .798, from .818 to .841, from .801 to .825, and .912 to .936, respectively. The values of RMSEA and Akaike information criterion (AIC) also showed model improvement. Model 3 was chosen for the final model to test the theoretical hypotheses that were listed in Chapter III. However, a caution is given that it is difficult to argue that this model fits the data adequately well because GFI, AGFI, NFI, and RFI are still less than .90 and RMR is over 1.0.

Figure 10 presents a revised model of the initial structural equation model (Figure 8) adjusted for the results of measure validations and modification of paths. In the revised

Table 24. *Model Fit Improvement: Models 1, 2, and 3.*

				Fit index summary							
	χ^2	*df*	χ^2/df	GFI	AGFI	NFI	RFI	IFI	RMSEA	RMR	AIC
Model 1[a]	755.490	425	1.778	.800	.767	.818	.801	.912	.063	1.691	897.49
Model 2[b]	755.587	426	1.774	.800	.767	.818	.802	.912	.063	1.561	895.59
Model 3[c]	661.086	422	1.567	.828	.798	.841	.825	.936	.054	1.540	809.09

Note. N_1 = 195. Number of parameters were 111 for Model 1, 110 for Model 2, and 114 for Model 3. χ^2 = chi-square estimate of overall model fit; *df* = degrees of freedom; GFI = goodness of fit index; AGFI = adjusted goodness of fit index; NFI = normed fit index; RFI = relative fit index; IFI = incremental fit index; RMSEA = root mean square error of approximation; RMR = root mean square residual; AIC = Akaike information criterion.

[a]Bollen-Stine bootstrapped p = .002

[b]Bollen-Stine bootstrapped p = .002

[c]Bollen-Stine bootstrapped p = .022

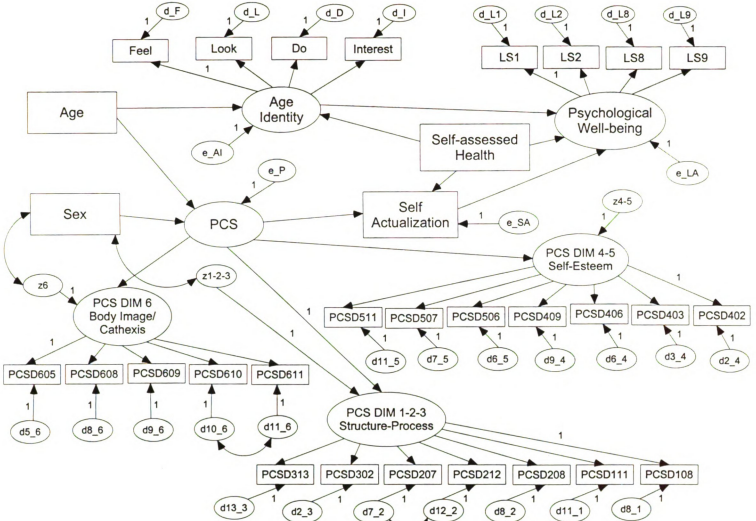


Figure 10. Structural Equation Model (with Modification).

model, covariances among the exogenous variable, sex, and error terms were allowed due to the characteristics of the data set. The results of AMOS analysis of the revised model are presented in Table 25.

Hypotheses Testing

Nine hypotheses based on theoretical grounds and previous empirical findings were developed through Chapters I and II. The model in Figure 11 presents structural path coefficients for each relationship incorporated in the proposed hypotheses. The following section discusses the test of these hypotheses. Table 25 reports the standardized factor loadings, path coefficients, and R^2 values obtained for testing hypotheses by estimating the revised model of Figure 10 after validation of the measurement model.

> Hypothesis 1a: Age has a positive, direct impact on proximity of clothing to self of older persons.
>
> Hypothesis 1b: Sex has a positive, direct impact on proximity of clothing to self of older persons.

The hypotheses predicted chronological age and sex to have a positive direct effect on proximity of clothing to self, PCS. The hypothesized effect of age on PCS was supported ($\beta_s = .32$; $p < .001$). Older elderly individuals' level of psychological closeness of clothing to the self was significantly higher than was younger elderly individuals. This finding is consistent with Lynn's (1990) findings that the oldest group indicated the highest degree of PCS. It shows that the elderly group is not a homogenous group, and elderly individuals' proximity of clothing to self varies across the elderly life span. The hypothesized effect of sex on PCS also was supported ($\beta_s = .32$; $p < .001$). Specifically, female elderly individuals were more likely to have a higher level of psychological closeness of clothing to the self than were male elderly individuals.

Table 25. *Standardized Factor Loading, Path Coefficients, and Squared Multiple Correlations Obtained for Hypotheses Testing*

Construct/Indicator	λ_s[a]	*SE*[b]	Critical Ratio[b]	R^2[c]
Age Identity				
I Feel	.76	–	–	.60
I Look	.76	.06	10.67**	.59
I Do	.85	.09	11.34**	.70
My Interests are	.74	.09	9.81**	.50
PCS				
PCS Dimension 1-2-3	.95	–	–	.80
PCS Dimension 4-5	.99	.09	12.43**	.98
PCS Dimension 6	.79	.08	9.02**	.78
PCS Dimension 1-2-3				
PCSD108	.82	–	–	.67
PCSD111	.71	.08	10.93**	.50
PCSD207	.77	.07	12.19**	.64
PCSD208	.80	.08	12.91**	.67
PCSD212	.82	.07	13.40**	.58
PCSD302	.77	.07	12.16**	.59
PCSD313	.70	.08	10.69**	.48
PCS Dimension 4-5				
PCSD402	.89	–	–	.79
PCSD403	.85	.05	16.89**	.73
PCSD406	.80	.06	14.67**	.63
PCSD409	.81	.06	15.26**	.66
PCSD506	.86	.06	17.26**	.74
PCSD507	.84	.06	16.42**	.71
PCSD511	.77	.06	13.70**	.59
PCS Dimension 6				
PCSD605	.67	–	–	.45
PCSD608	.77	.11	9.60**	.60
PCSD609	.75	.10	9.34**	.56
PCSD610	.61	.12	7.72**	.37
PCSD611	.71	.12	8.89**	.50
Psychological Well-being				
LS1	.73	.09	9.21**	.53
LS2	.82	–	–	.68
LS8	.68	.09	8.75**	.47
LS9	.51	.08	6.62**	.26

Table 25. (cont.)

Construct/Indicator	β_s[a]	SE[b]	Critical Ratio[b]	R^2[c]
PCS ←				.21
Sex	.32	.18	4.45**	
Age	.32	.01	4.65**	
Age Identity ←				.45
Age	.64	.11	9.01**	
Self-assessed Health	-.21	.36	-3.33**	
Self-actualization ←				.10
PCS	-.26	.71	-3.65**	
Self-assessed Health	.17	.47	2.49**	
Psychological well-being ←				.18
Self-Assessed Health	.31	.04	4.00**	
Age Identity	-.17	.01	-2.05**	
Self-actualization	.12	.01	1.66*	
Correlations				
z6 ↔ Sex	.65			
z1-2-3 ↔ Sex	-.38			
d11_6 ↔ d10_6	.27			
d12_2 ↔ d7_2	.33			

Note. $N_1 = 195$.

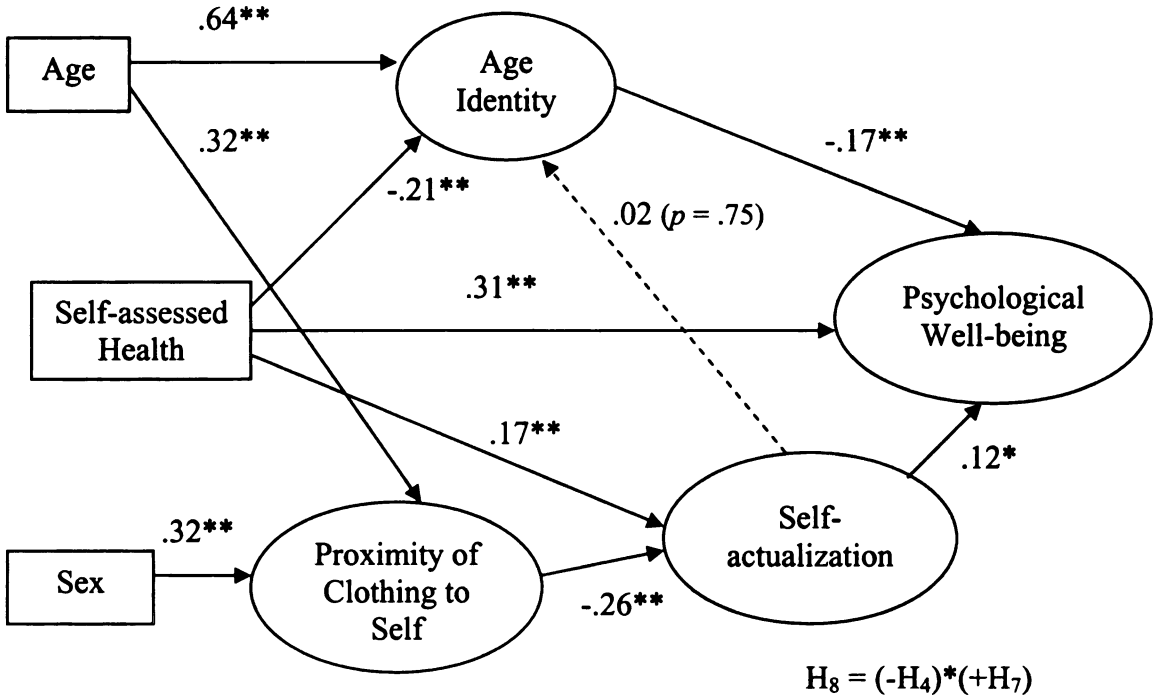
[a]λ_s = standardized factor loading; β_s = standardized path coefficient.

[b]SE= Standard errors. Dash (–) indicates λ was set to 1.0, therefore no standard errors or critical ratios are given.

[c]R^2 = squared multiple correlation coefficient. Values range from zero to one with higher values indicative of reliable variance explained.

**Factor loading or path coefficient is significantly differently from zero at α = .001.

*Factor loading or path coefficient is significantly different from zero at α = .10.



$\chi^2 = 661.086$[a];	$df = 422$	R^2 of Construct	
GFI	= .828	Age Identity	= .45
AGFI	= .798	PCS	= .21
NFI	= .841	Self-actualization	= .10
RFI	= .825	Psychological Well-being	= .18
IFI	= .936		
RMSEA	= .054	*$p \leq .10$	
χ^2/df	= 1.567	**$p \leq .001$	
		[a] Bollen-Stine $p = .022$	

Figure 11. Final model predicting elderly persons' successful aging.

Note. Dotted line indicates a proposed path not supported by the analysis.

Hypothesis 2: Age has a positive, direct impact on age identity of older persons.

The result indicated that the proposed positive relationship of chronological age on age identity was large, significant and supported ($\beta_s = .64$; $p < .001$). The elderly increases his or her level of age identity (perceived age) along with increases in his or her

chronological age. This finding is also consistent with findings from previous studies (Lynn,1990; Steitz & McClary, 1988; Uotinen, 1998; Wilkes, 1992). Wilkes hypothesized positive effect of chronological age on cognitive age applying the structural equation modeling approach and indeed found the significantly positive relationship between these two variables.

> Hypothesis 3a: Self-assessed health has negative, direct impact on age identity of older persons.
>
> Hypothesis 3b: Self-assessed health has positive, direct impact on self-actualization of older persons.
>
> Hypothesis 3c: Self-assessed health has a positive, direct impact on psychological well-being of older persons.

All three hypothesized effects of self-assessed health on age identity, self-actualization, and psychological well-being were supported. The path between self-assessed health and age identity was indeed negative (β_s = -.21) and significant ($p <$ .001). Elderly individuals who assessed themselves as having good health felt themselves younger than their chronological age. In other words, elderly individuals who have good health have younger age identity. The paths of self-assessed health on both self-actualization and psychological well-being also were positive (β_s =.17; β_s =.31 respectively) and significant ($p < .05$; $p < .001$ respectively). Steitz and McClary (1988) found that (1) poor health led to the perception of an older subjective age; (2) poor health led to low self-esteem, one of human needs; and (3) poor health led significantly to low life satisfaction. This finding is consistent with the results from the George, et al. (1980) study.

> Hypothesis 4: Proximity of clothing to self has positive, direct impact on self-actualization of older persons.

The result showed a significant causal relationship of PCS on self-actualization ($p < .001$); however, this path was negative ($\beta_s = -.26$) rather than positive as this researcher proposed originally. A negative direct effect of PCS on self-actualization was found. It may be that elderly individuals who are closely attached to one specific environmental object, here clothing, are not as highly self-actualized as those who didn't attach themselves to any specific object. Further exploration to support this unexpected result is needed and is presented in the section on exploratory correlation analysis.

Another explanation for this negative direct relationship of PCS on self-actualization is possible applying need satisfaction theory. A self-actualization measurement (i.e., POI) measured the level of a self-actualized person. The result in this study could be interpreted as follows. An elderly person who has a high level of self-actualization has already met his or her needs; in other words, he or she was already fulfilled in his or her life so there was less need to use an object such as clothing to improve his or her fulfillment. Conversely an elderly person who has a low level of self-actualization, may use an environmental object, such as clothing, to increase his or her fulfillment in daily life. Thus, clothing appears to be more important for those striving to fulfill the need for self-actualization than for those whose need is already fulfilled. Data previously presented in Tables 16 and 19 suggests that the greater proximity of clothing to self of women as they age may help explain the decline in self-actualization for women as they get older. Women, particularly, may use clothing to an instrumental way or as a coping strategy to support the self and meet their need for self-actualization.

Hypothesis 5: Self-actualization has negative, direct impact on age identity of older persons.

The above hypothesis, predicting a negative relationship between self-actualization and age identity was not supported. Because the path between these variables was nonsignificant ($\beta_s = .02$; $p = .750$), it was removed from the final structural model. This path is shown as a dotted line in Figure 11.

Hypothesis 6: Age identity has a negative, direct impact on psychological well-being of older persons.

The hypothesis was supported ($\beta_s = -.17$; $p < .05$). The result indicated that elderly individuals who had younger age identity (i.e., feeling younger than one's chronological age) were more satisfied in their later life than those who felt themselves to be older. This result is supported by previous research. Hoyt et al. (1980) found a negative relationship between age identity and life satisfaction. This finding is also consistent with the results from the George, et al. (1980) study. Logan, Ward, and Spitze (1992) also found that life satisfaction (psychological well-being) was highest among those who considered themselves young and lowest among the old. It really says that the positive aspects of youth as being vital and alive are associated with a younger subjective age (age identity) and further leads to older persons' psychological well-being.

Hypothesis 7: Self-actualization has a positive, direct impact on psychological well-being of older persons.

The above hypothesis examined the effect of self-actualization on psychological well-being. The posited effect was low and marginally significant ($\beta_s = .12$; $p < .10$). Thus, an individual's level of self-actualization contributed to a higher level of psychological well-being. But much of the variance in psychological well-being remains unexplained by this variable. Previous research provides evidence for significantly positive relationship of self-esteem on older persons' psychological well-being or life

satisfaction (Steitz & McClary, 1988). If so, self-actualization which is a higher level of human need may have a lesser degree of impact on older person's successful aging, especially for those still striving to satisfy esteem needs.

> Hypothesis 8: PCS has a positive, indirect impact on psychological well-being mediated by the self-actualization of older persons.

The result showed the significant indirect path of PCS on psychological well-being mediated by self-actualization ($p < .001$); however, this path was negative (β_s = -.03) rather than positive as this researcher proposed originally. The effect is also close to zero in magnitude. This result is because of the result from hypothesis 5 that PCS had a direct negative effect on self-actualization.

> Hypothesis 9: Among older persons who are age 65 and over, the levels of influence of the independent variables and the intervening variables are predictive of the level of psychological well-being.

The last hypothesis examined the overall structural model for elderly individual's psychological well-being, one component of successful aging, integrating all the variables selected for this study. As described earlier in this chapter, the value of the ratio (χ^2/df) was 1.567 (< 3.0) and indicated overall good model fit. Thus, the overall model was accepted although other fit indices didn't highly support an adequate level of fit. As shown in Figure 11, the unique variances (R^2) of each construct (i.e., self-actualization, PCS, age identity, and psychological well-being) explained by the model as a whole ranged from .10, .21, .45, to .18 respectively. Thus, it is concluded that other important variables exist that further explain these four constructs and finding these and developing a model including these may improve the model fit.

At least, the hypothesized model in this study represented the causal relationships

among some important constructs in the area of clothing and human behavior. The hypothesized model test was unique with respect to understanding the causal relationships of clothing and other variables in an older person's self-system using the structural equation modeling approach. It is also unique because of the attempt to continue using the PCS Scale that had been developed in the clothing and human science discipline and to build theoretical linkages among other variables with PCS. However, several limitations existed in this model, and the researcher is sincerely aware of these. The initial, theoretical model did not incorporate all relevant variables such as clothing interest, clothing satisfaction, other domains of life (e.g., family life, friends), and various kinds of human needs (i.e., physiological, safety, belonging, and self-esteem).

Andrews and Withey (1976) included a number of domains which were house/apartment, neighborhood, friends, school life, family life, work done for pay, places for recreation and sports, and one's self to understand the relationships between satisfaction with the domains of life and a person's perceived quality of life. Also, human behavior is motivated by needs at various levels according to Maslow's (1970) motivation theory. Inclusion of other domains of life and the needs listed above may give a clearer picture of the elderly individual's self-system process and environmental resources important for aging successfully.

Exploratory Correlation Analysis

To address objective three, further examination was conducted to explore correlations: (1) among each of the three confirmed subscales of PCS, overall self-actualization (SA), the two major scales of the POI, and the ten subscales of the POI, (2) between each of the three PCS subscales and each indicator of age identity, and (3)

among overall age identity, the four indicators of the Cognitive Age Scale, overall SA, the two major scales of the POI, and the ten subscales of the POI.

In the SEM analysis, this researcher investigated only direct impacts of the PCS on overall self-actualization and of overall self-actualization on age identity. No relationship among each confirmed dimension of PCS with overall self-actualization or each subscale of self-actualization with age identity was completed. This researcher's aim is that this correlational analysis may explain a few hypotheses that were rejected or had a reverse effect (i.e., negative rather than positive) of one variable on the other.

Proximity of Clothing to Self and Self-actualization

The results of hypothesis 4 showed a significant causal relationship of PCS on self-actualization ($p < .001$); however, the path was negative ($\beta_s = -.26$) rather than positive as this researcher proposed originally. Examining correlations among subscales of each construct could provide clearer understanding of this negative path relationship of PCS to self-actualization. Table 26 reports correlations between the subscales of these two constructs. Only correlations significantly different from zero will be discussed.

For all respondents taken as a single group, overall self-actualization (SA) was negatively correlated with PCS Dimension 1-2-3, the *clothing in relation to self as structure – process* subscale ($r = -.166$; $p < .05$) and PCS Dimension 4-5, the *clothing in relation to self-esteem – evaluative and affective processes* subscale ($r = -.283$; $p < .01$); however, no significant correlation was found between overall SA and PCS Dimension 6, the *clothing in relation to body image and body cathexis* subscale. Among the three age categories, overall SA only had significantly negative correlation with all three PCS subscales for the 75 to 84 years category (i.e., -.299 for PCS Dimension 1-2-3, -.384 for

Table 26. *Correlations between the PCS Subscales and Self-actualization*

Self-actualization (SA)	Chronological Age Category	Proximity of Clothing to Self (PCS)		
		Dim 1-2-3 Structure – Process	Dim 4-5 Self-Esteem	Dim 6 Body Image/Cathexis
Overall SA	All age groups	-.166*	-.283**	-.139
	65 to 74	.032	-.144	.089
	75 to 84	-.299**	-.384**	-.419**
	85 and over	-.268	-.262	-.021
Time-competent	All age groups	-.176*	-.190**	-.152*
	65 to 74	.016	-.012	.101
	75 to 84	-.290*	-.347**	-.470**
	85 and over	-.372	-.235	-.083
Inner-directed	All age groups	-.139	-.274**	-.117
	65 to 74	.032	-.164	.078
	75 to 84	-.268*	-.352**	-.359**
	85 and over	-.128	-.262	-.021
Self-actualizing Value	All age groups	.071	-.098	.073
	65 to 74	.190	-.080	.146
	75 to 84	-.041	-.089	-.029
	85 and over	.090	.006	.159
Existentiality	All age groups	-.248**	-.288**	-.161*
	65 to 74	-.027	-.094	.092
	75 to 84	-.394**	-.441**	-.421**
	85 and over	-.305	-.262	-.024
Feeling Reactivity	All age groups	-.089	-.157*	-.073
	65 to 74	.050	-.070	.108
	75 to 84	-.144	-.210	-.219
	85 and over	-.167	-.041	-.134
Spontaneity	All age groups	-.104	-.181*	-.035
	65 to 74	.074	-.099	.151
	75 to 84	-.226**	-.272*	-.236*
	85 and over	-.147	.006	.016
Self-regard	All age groups	.078	-.113	-.027
	65 to 74	.189	-.068	.024
	75 to 84	.055	-.080	-.083
	85 and over	.207	.099	.273
Self-acceptance		-.176*	-.251**	-.159*
	65 to 74	.035	-.120	.034
	75 to 84	-.339**	-.371**	-.402**
	85 and over	-.489**	-.487**	-.265

Table 26. (cont.)

Self-actualization (SA)	Chronological Age Category	Proximity of Clothing to Self (PCS)		
		Dim 1-2-3 Structure – Process	Dim 4-5 Self-Esteem	Dim 6 Body Image/Cathexis
Nature of Man, Constructive	All age groups	.001	-.040	-.031
	65 to 74	.008	-.043	.012
	75 to 84	-.101	-.085	-.164
	85 and over	.283	.147	.145
Synergy	All age groups	-.007	-.075	-.031
	65 to 74	.153	.009	.104
	75 to 84	-.161	-.189	-.211
	85 and over	-.025	-.024	.031
Acceptance of Aggression	All age groups	-.115	-.192*	-.082
	65 to 74	.031	-.100	.090
	75 to 84	-.127	-.209	-.195
	85 and over	-.273	-.055	-.090
Capacity for Intimate Contact	All age groups	-.110	-.208**	-.066
	65 to 74	-.007	-.140	.060
	75 to 84	-.124	-.249*	-.180
	85 and over	-.152	-.081	.062

Note. ** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

PCS Dimension 4-5, and -.419 for PCS Dimension 6 respectively).

For all respondents, the time-competent (T_C) scale, one of the major scales in the POI to measure self-actualization, was negatively correlated with all three PCS subscales (i.e., -.176 for PCS Dimension 1-2-3, -.190 for PCS Dimension 4-5, and -.152 for PCS Dimension 6). For this scale, significantly negative correlations with all three PCS subscales were found only for the 75 to 84 years group among the three age categories (i.e., -.290 for PCS Dimension 1-2-3, -.347 for PCS Dimension 4-5, and -.470 for PCS Dimension 6 respectively). No significant correlation was found for the age categories of

65 to 74 years, or 85 years and over.

The other major scale on POI, the inner-directed scale, was only negatively correlated with the PCS Dimension 4-5 (r = -.274; p < .01) for all respondents. Just as with both overall SA and time-competent scale, negative correlations with the three PCS subscales were found for the 75 to 84 years group among the three age categories (i.e., -.268 for PCS Dimension 1-2-3, -.352 for PCS Dimension 4-5, and -.359 for PCS Dimension 6 respectively).

For the ten POI subscales and the three age categories, no significant correlation was found between the PCS subscales and the following POI subscales: self-actualizing value (SAV), self-regard (Sr), nature of man (Na), synergy (Sy), acceptance of aggression (A), and feeling reactivity (Fr). The POI subscales, existentiality (Ex), spontaneity, and self-acceptance (Sa) had significantly negative correlations with all three PCS subscales for the age category of 75 to 84 years. Self-acceptance also had significant correlations with PCS Dimension 1-2-3 and Dimension 4-5 for those 85 and over. The values of the correlations are shown in Table 24.

The *existentiality* subscale measures one's flexibility in applying self-actualizing values or principles to one's life. It is a measure of one's ability to use good judgment in applying these general principles. Elderly individuals who had higher scores on this subscale (i.e., higher flexibility in application of values), tended to be less psychologically close to clothing. Those who got low scores on the *existentiality* subscale (i.e., holding values so rigidly that they may become compulsive or dogmatic), tend to be more psychologically close to clothing and may have a tendency to use clothing to improve their level of *existentiality*. Other environmental objects may serve a similar

function.

A high score on the *spontaneity* subscale indicates that elderly individuals have ability to express feelings behaviorally or in spontaneous action. Elderly individuals with a high score on the *self-acceptance* subscale accept themselves in spite of their weaknesses or deficiencies. Elderly individuals who have high scores on these POI subscales may be more open toward change and to transition. These people might have a tendency to live their everyday lives more holistically or spiritually rather than to attach themselves to a specific object. Conversely those with low scores on these subscales may use clothing to assist them in spontaneous action and self-acceptance. Further, this use of clothing may lead older persons to adapt to their transition periods more positively.

Proximity of Clothing to Self and Age Identity

This researcher did not hypothesize any causal relationship of age identity on PCS or of PCS on age identity because of lack of theoretical support. The positive causal relationships of chronological age on both PCS and age identity were proposed and supported. At this point, the researcher was interested to explore the correlation between age identity and PCS. Table 27 shows correlations between overall age identity (AI) and the three PCS subscales, and between the four indicators of AI and the PCS subscales.

Overall AI was significantly correlated with PCS Dimension 4-5, the *clothing in relation to self-esteem – evaluative and affective processes* subscale ($r = .164$; $p < .05$) for all respondents as a single group. No significant correlations were found on overall AI with either PCS Dimension 1-2-3 or PCS Dimension 6. Furthermore, no significant correlation was found between overall AI and all three PCS subscales for the three different age categories. For the indicators of age identity, the *look* item of AI and PCS

Table 27. *Correlations between the PCS Subscales and Each Indicator of Age Identity*

Age Identity	Proximity of Clothing to Self		
	PCS Dim 1-2-3 Structure – Process	PCS Dim 4-5 Self-Esteem	PCS Dim 6 Body Image/Cathexis
Overall AI			
All age groups	.120	.164*	.055
65 to 74	-.007	.047	-.082
75 to 84	.051	.035	-.026
85 and over	-.177	-.198	-.208
I Feel...			
All age groups	.133	.191**	.051
65 to 74	.067	.105	-.026
75 to 84	.075	.074	-.022
85 and over	-.154	-.013	-.258
I Look...			
All age groups	.093	.122	.076
65 to 74	.006	.008	-.063
75 to 84	.084	.044	.057
85 and over	-.375*	-.291	-.156
I Do...			
All age groups	.065	.115	.059
65 to 74	-.089	-.019	-.100
75 to 84	-.016	.029	.020
85 and over	-.008	-.165	-.017
My Interest...			
All age groups	.108	.115	.005
65 to 74	-.008	.041	-.074
75 to 84	.038	-.024	-.132
85 and over	-.013	-.113	-.150

Note. ** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Dimension 1-2-3 was negatively correlated ($r = -.375$; $p < .05$) for the age category of 85 years and over. It may be interpreted that older persons who reach 85 years and over use a human resource, clothing, to make themselves look younger than their chronological age and communicate their youthful self-image to others in social interaction. No

significant correlation of the *feel, do, interest* items of AI with the PCS subscales was found when respondents were subdivide by age categories. This examination discovers that elderly individuals' age identity does not have much relationship with PCS except for the very old as explained above. This no significant relationship may be from too wide age range of the respondents.

Age Identity and Self-actualization

Negative, direct impact of self-actualization on age identity was hypothesized and not supported. Exploring correlations among subscales of these two constructs could provide further explanation of the relationship between these two constructs. Table 28 presents correlations of overall AI with overall SA, two major scales of the POI, and ten-subscales of the POI and of the four indicators of AI with overall SA, two major scales of the POI, and ten-subscales of the POI.

Interestingly, a negative correlation between overall AI and overall SA was found ($r = -.166$; $p < .05$) for all respondents although the path model showed almost no relationship of SA to AI. No significant correlation between overall SA and each of the four items of AI was found for the specific age categories, although for all respondents there was a significant, yet small negative correlation with three of the four indicators of AI (*feel, do*, and *interest*). The *look* item of AI had the least number of significant correlations with the 10 POI subscales among the four items which were *feel, look, do* and *interest*. It is possible to say that older persons who are self-fulfilled in their daily lives may perceive themselves younger than their chronological age. Elderly persons who are more self-actualized may have less tendency to emphasize how they look or are viewed by others. These people may be less sensitive to their physical changes and accept

Table 28. *Correlations between Age Identity and Self-actualization*

Self-Actualization	Age Identity				
	Overall AI	I Feel	I Look	I Do	My Interest
Overall SA					
All age groups	-.166*	-.148*	-.099	-.145*	-.155*
65 to 74	-.067	-.081	-.058	-.017	-.055
75 to 84	-.112	-.112	-.004	-.171	-.067
85 and over	.118	.180	.321	.147	-.278
Time-competent					
All age groups	-.088	-.068	-.036	-.161*	-.018
65 to 74	-.041	.015	-.003	-.057	.002
75 to 84	-.068	-.089	-.007	-.190	.061
85 and over	.094	.109	.259	-.151	.097
Inner-directed					
All age groups	-.172*	-.157*	-.111	-.129	-.174*
65 to 74	-.074	-.097	-.066	-.006	-.064
75 to 84	-.111	-.106	-.003	-.147	-.094
85 and over	.049	.124	.220	.162	-.341
Self-Actualizing Value					
All age groups	-.197**	-.159*	-.097	-.178*	-.213**
65 to 74	-.140	-.081	-.056	-.149	-.148
75 to 84	-.267*	-.252*	-.099	-.262*	-.253*
85 and over	.023	.043	.061	.156	-.195
Existentiality					
All age groups	-.160*	-.168*	-.128	-.100	-.137
65 to 74	-.210*	-.209*	-.240*	-.065	-.171
75 to 84	.039	.014	.098	.008	.034
85 and over	.226	.052	.416*	.226	-.015
Feeling Reactivity					
All age groups	-.216**	-.165*	-.155*	-.188**	-.212**
65 to 74	-.088	-.089	-.048	-.042	-.094
75 to 84	-.268*	-.221	-.131	-.253*	-.275*
85 and over	.024	.186	-.027	-.016	-.091
Spontaneity					
All age groups	-.223*	-.168*	-.127	-.190**	-.253**
65 to 74	-.104	-.106	-.041	-.041	-.133
75 to 84	-.222	-.177	-.042	-.247*	-.243*
85 and over	-.175	.061	-.066	-.118	-.354

Table 28. (cont.)

Self-Actualization	Age Identity				
	Overall AI	I Feel	I Look	I Do	My Interest
Self-Regard					
All age groups	-.239**	-.139	-.119	-.274**	-.257**
65 to 74	-.102	.025	-.035	-.161	-.158
75 to 84	-.219	-.218	-.047	-.278*	-.162
85 and over	-.097	.132	.111	-.167	-.303
Self-Acceptance					
All age groups	.076	.031	.100	.070	.067
65 to 74	.094	.020	.049	.114	.117
75 to 84	.132	.083	.157	.056	.165
85 and over	.083	.081	.367	.105	-.258
Nature of Man, Constructive					
All age groups	-.107	-.096	-.107	-.084	-.076
65 to 74	-.026	.013	-.073	-.048	.011
75 to 84	-.339*	-.314*	-.226*	-.364*	-.209
85 and over	.206	.062	.093	.358	.034
Synergy					
All age groups	-.072	-.035	-.043	-.044	-.120
65 to 74	-.074	.018	-.151	-.002	-.142
75 to 84	-.101	-.128	-.033	-.111	-.053
85 and over	.150	.150	.416*	.147	-.234
Acceptance of Aggression					
All age groups	-.216**	-.176*	-.131	-.174*	-.235**
65 to 74	-.122	-.130	-.055	-.068	-.121
75 to 84	-.123	-.103	.001	-.138	-.146
85 and over	.011	.192	.108	.131	-.390*
Capacity for Intimate Contact					
All age groups	-.139	-.091	-.091	-.089	-.195**
65 to 74	-.048	-.040	-.100	.079	-.117
75 to 84	-.081	-.071	.026	-.072	-.125
85 and over	-.040	.156	.188	-.111	-.298

Note. ** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

these changes positively through the aging process. They may have a greater tendency to incorporate their feelings or interests that they've had through their previous life experiences.

This researcher initially had high interest to explore the relationship between age identity and the time-competent scale of POI. Shostrom (1987) argued that a self-actualizing person was primarily time-competent and thus appeared to live more fully in the here–and-now. Such a person was able to tie the past and the future to the present in meaningful continuity; appeared to be less burdened by guilt, regrets, and resentments from the past than was the non-self-actualizing person, and aspirations were tied in a meaningful way to present working goals (Shostrom). Based on this theoretical ground, this researcher wanted to observe whether older persons who were highly self- actualized might have a similar age identity to their chronological age and then this similar age identity might contribute to their satisfaction with life. No significant correlation was found for the time-competent scale and the overall AI and three AI indicators (i.e., *feel, look and interest* items). It may be because of the respondents' wide age range as a function of interrelationships among different age categories. The *do* item of AI had negative correlation with the time-competent scale of POI for all respondents before subdividing by age category. Elderly persons who are able to positively adapt to various life changes and thus live in the present may more actively engage in their daily lives, especially with activities that they associate with a more youthful age.

For the subscales of the POI, negative correlations of overall AI on six subscales [i.e., self-actualizing value (SAV), existentiality (Ex), feeling reactivity (Fr), spontaneity (S), self-regard (Sr), and acceptance of aggression (A)] were found for all respondents.

Among these POI subscales, the *feeling reactivity* (Fr) subscale was negatively correlated with all four AI indicators. The SAV, S, and A subscales had negative correlations with the *feel, do*, and *interest* items of AI. The Sr subscale had negative correlations with the *do* and *interest* items of AI and the Ex subscale was negatively correlated with only one indicator, the *feel* item, of AI. The *do* item of AI, was most frequently correlated among these six POI subscales for the age category of 75 to 84 years, followed by the *interest* item, the *feel* item, and the *look* item. These negative correlations suggest that older persons who are self-fulfilled in their daily lives for these specific POI subscales might perceive themselves younger than their chronological age.

Implications for future research resulting from this exploratory correlation analysis as well as from the other analyses will be discussed in the next Chapter.

CHAPTER V

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

This concluding chapter summarizes the objectives of the study, the explanation of a proposed model within the human ecological framework and needs theory, research methods, and discussion of the main findings in the study. It concludes with a discussion of the limitations of the study. Conclusions and recommendations are discussed. Implications for future studies and for practice are also presented.

Summary of Research Design and Sample

The focus of this study was the elderly population in the United States. Although a growing number of people are aged 65 and over and the elderly are now the fastest growing segment in the United States, little research has focused on the role of clothing on the enhancement of the aging process. In particular, does clothing affect how they feel about themselves and contribute to their self-actualization and psychological well-being? The main purpose of the study was to contribute to theory development in the importance of clothing to the self with the integration of two main theories (i.e., Maslow's needs satisfaction theory and human ecology theory) and to refine or identify measures of major concepts and directional relations among these important concepts for the elderly population.

The specific research objectives were (1) to confirm the factor structure of the Proximity of Clothing to Self (PCS) Scale and demonstrate its construct validity and reliability for elderly individuals; (2) to develop and test a conceptual model that explains how elderly individuals may age successfully by fulfilling the need for self-actualization

by incorporating a primary resource environment, i.e., clothing, into their self-system; and (3) to explore correlations among PCS subscales, age identity, and subscales of the Personal Orientation Inventory (POI), a measure of self-actualization. Gaining a more comprehensive view of elderly individuals interacting with one of their human-built environments, here clothing, could also provide additional information with which to build a better conceptual framework for studying elderly individuals interacting with their various environments in their self-system, in terms of a human ecological framework.

The findings of this study were based on the data collected with support of the Michigan Agricultural Experiment Station (MAES project MICLO 2024 entitled "Ecological Theory Construction in Clothing and the Self"), MSU College of Human Ecology, MSU Graduate School, and Kappa Omicron Nu Honor Society. The data were obtained in November 2004 through February 2005 using a mail survey design following the guidelines of Salant and Dillman's (1994) total design method. A random list of 1,700 elderly individuals who were aged 65 and over living in the United States including the District of Columbia was generated and purchased from Survey Sampling International, a sampling company in Fairfield, Connecticut. Careful sampling direction was given to the sampling company to provide a strong representative sampling frame. To escape overrepresentation of each sex, weighting was applied for stratified sampling by sex. Therefore, the 1,700 randomly selected subjects consisted of 969 female and 731 male elderly individuals across the United States.

The instrumentation for the study was composed of two main questionnaires. First, the questionnaire, *Clothing: A Resource for Successful Aging?*, was organized to measure variables related to (1) proximity of clothing to self (PCS) using 40 items of the PCS

Scale, (2) psychological well-being, one component of successful aging, using the 13 items of the Life Satisfaction Index (LSIZ), (3) age identity using four items of the Cognitive Age Scale, (4) self-assessed health using two health questions, and (5) individual's demographic information. The other instrument was the *Personal Orientation Inventory* (POI) which was the measure of self-actualization purchased from the Educational and Industrial Testing Service (EdITS). A pre-test of these two instruments was conducted with 15 elderly individuals living in or near the Lansing area in Michigan in an effort to develop a questionnaire that measured intended constructs and that was useful for data collection with the elderly over age 65.

The *Statistical Package for the Social Sciences* (SPSS Version 12.0) software and *Amos 5.0* were employed to conduct statistical analysis and model testing. Listwise deletion of missing data was used for the variables in this study to insure that any conclusions could be made using the same set of cases. Demographic data were analyzed using descriptive statistics for both 250 respondents (N_{1+2}) for the first objective and 195 respondents (N_1) for the remaining two objectives of the study. An initial series of confirmatory factor analyses (CFA) was used to test the measurement model for the PCS Scale followed by testing the structural equation model for theoretical predictors of successful aging; then correlations among the three PCS subscales, two major scales and ten subscales of the Personal Orientation Inventory, and four items of the Cognitive Age Scale were explored.

The ages of elderly respondents ranged from 65 years to 94 years. The range of years was 29 years. Mean and median ages were 76 and 75 years, respectively. Among the respondents, females comprised of about 60% and males comprised of about 40%.

About 42%, 38%, and 13% of the elderly (N_{1+2}) were in the age categories of 65 to 74 years, 75 to 84 years, and 85 and over, respectively. About 46%, 40%, and 14% of the elderly (N_1) were in the age categories of 65 to 74 years, 75 to 84 years, and 85 and over, respectively. The respondents in this study were representative of the U.S. elderly population based on proportion by age category and sex.

The survey respondents were primarily white and non-Hispanic or Latino. Over 80 percent of the elderly respondents obtained a high school diploma, attended or completed college, or completed some graduate education or graduate degree. The elderly individuals who participated in this study were more highly educated compared to the entire U.S. elderly population. About half of the respondents were living alone followed by living with their spouse. About one-tenth of the respondents were residing with relatives such as sister, son, or daughter. The rest of the respondents answered that they resided with their friends, caregiver, or relatives some of the time.

The median income range for elderly respondents was from $20,000 to $27,499 per year. Among those who reported their income levels, the income level was quite different by sex with women having less income than men. The respondents in this study were in a much higher income range compared to the income level of the U. S. elderly population.

Over half of the respondents had occupations classified under the management, professional, and related occupation category followed by sales and office occupations and service occupations. Around 10% of respondents had an occupation related to construction, extraction, and maintenance or production, transportation, and material moving. Two-thirds of the responses were from retirees, and one-fifth of the respondents

were involved in part-time volunteer work.

Overall, the data from the respondents in this study were representative of the data of the U.S. elderly population in terms of the proportion for sex and age category. However, attention is needed when generalizing these data because the respondents were mostly from the White ethnic group; had higher education and higher income; and were involved in more professional related occupations compared with the characteristics of the U.S. elderly population.

Summary of the Findings

Three objectives were proposed in this study. The findings are summarized for each objective, and discussion of the findings is also included.

Research Objective 1

> Research objective 1 was to confirm the factor structure of the Proximity of Clothing to Self (PCS) Scale and demonstrate its construct validity and reliability for elderly individuals.

Three rounds of the confirmatory factor analysis (CFA) using the structural equation modeling (SEM) approach were completed and resulted in a 3-factor, 19-item PCS Scale with demonstrated construct validity and reliability for elderly individuals. The initially hypothesized 6-factor scale by Sontag and Lee (2004) was not confirmed for this elderly group. Further, Sontag and Lee's 4-factor solution of PCS Scale for the adolescent group did not hold for this elderly group. Specific findings and a brief discussion under each round of the CFA for the PCS Scale are presented below.

CFA Round 1: Single Factor Analysis. The objective for Round 1 was to arrive at a reduced and best set of observed variables for each of the six dimensions of PCS. In this analysis stage, no elimination was made except the two PCS items under PCS

Dimension 6 (PCSD603 and PCSD613) and one item from PCS Dimension 1 (PCSD1_40) that was a modification of an original item. Thirty-seven items were retained at the conclusion of Round 1. All factor loading exceeded .60 and all R^2 exceeded .37.

CFA Round 2: Theoretical Pairing. The objective for Round 2 of the CFA was to check the degree of collinearity that might exist between certain related dimensions and to eliminate any items that cross-loaded on dimensions other than that for which they were designed. Pairing was planned between Dimensions 1 and 2, Dimensions 2 and 3, and Dimensions 4 and 5 that might be highly correlated. The 37 items were the observed variables used in this Round 2, with the exception that any modification made in Dimension 2 as a result of the first pairing of Dimensions 1 and 2 would need to be made for the input to the second pairing of Dimensions 2 and 3.

The correlation between the two latent factors, PCS Dimensions 1 and 2, was high indicating a high degree of collinearity. The combined PCS Dimensions 1 and 2 (seven observed variables) were paired with PCS Dimension 3 (four observed variables retained from the single factor CFA). The correlation between the two latent factors, the combined PCS Dimensions 1-2 and PCS Dimension 3 also indicated a high degree of collinearity. For the elderly group, these two separate dimensions did not hold up and were again combined into a single dimension (PCS Dimension 1-2-3) called *clothing in relation to self as structure – process*. This finding was not identical to the result from the adolescent group (Sontag & Lee, 2004). In their study, they theorized that PCS dimension 1 would remain a separate dimension from PCS dimensions 2 and 3 for the adult groups. Interestingly, a major change in the theoretical content of PCS occurred since the

structural component and both processual components of the self were no longer distinct for the elderly group. A set of seven variables were retained in this combined dimension.

The pairing of PCS Dimensions 4 and 5 resulted in high correlation between the two latent variables. Thus, these two dimensions were combined and a seven-item solution resulted. This result is consistent with the findings from Sontag and Lee's (2004) study of the adolescent group although the items retained were somewhat different for the current study.

Thus, as input to the full model tests, there were a total of 19 observed variables retained as a result of Round 2. In terms of the factor structure, Round 2 led the researcher to combine PCS Dimensions 1, 2, and 3 into a single dimension and PCS Dimensions 4 and 5 into a single dimension and named as *clothing in relation to self as structure – process* and *clothing in relation to self-esteem – evaluative and affective processes*, respectively.

CFA Round 3: Full Model Testing. The objectives of Round 3 were to assess the fit of the full multi-factor model and determine whether there was a second-order factor that accounts for the correlations among the first-order factors. The researcher tested the first-order measurement model that culminated from the previous two rounds.

Under the first-order factor model, correlations among the three PCS dimensions were high. In a second-order model, the first-order latent factors were explained by the higher-order structure, PCS. For the elderly individuals, PCS Dimension 4-5, *clothing in relation to self-esteem – evaluative and affective processes*, was core to their PCS. All three confirmed dimensions achieved construct reliabilities greater than .80. The researcher concluded that the final measurement model had attained satisfactory

reliability, both overall for each construct as well as for each item.

The researcher anticipated the merger of PCS Dimensions 4 and 5 because some respondents made statements that were both evaluative and affective in Sontag and Lee's (2004) qualitative survey, and these dimensions were also combined for adolescents; but the researcher did not anticipate the merger of PCS Dimensions 1, 2, and 3. This result requires a different explanation compared to Sontag and Lee's argument in their 2004 study. It is possible to say that the self-system of elderly individuals works or processes more holistically than other younger age groups (i.e., adolescent group) because of their various life experiences. They may have the ability to separate their structural and processual components within their self-system as evidenced by what they say about clothing in relation to the self (Sontag & Lee); however, elderly individuals may integrate this knowledge (i.e., clothing as a component of self-image, clothing as a communication tool conveying messages of self to others, and clothing as a communication tool responding to the actual or imagined judgment of the self by others) into their daily lives.

This researcher hoped to maintain the same items of the PCS Scale for the elderly group as the items obtained for the adolescent group in Sontag and Lee's (2004) study in order to use this scale across different age ranges. However, this study shows that some PCS items under the subscales performed differently for different age groups. It appears that arriving at a single uniform PCS Scale for use across the lifespan is not an achievable objective as was hoped by Sontag and Lee, and evidence also suggests that the factor structure of the PCS Scale changes with human development.

Research Objective 2

> Research objective 2 was to develop and test a conceptual model that explains how elderly individuals may age successfully by fulfilling the need for self-

actualization by incorporating a primary resource environment, i.e., clothing, into their self-system.

AMOS 5.0 was employed to test a structural equation model using a two-stage analysis that utilized the maximum likelihood (ML) estimator with bootstrapping. The measurement model for each latent construct indicated by multi-item scales (i.e., PCS, age identity, and psychological well-being) was tested by confirmatory factor analysis (CFA) and then the structural path model was tested.

The structural equation model in this study was a recursive model that had only unidirectional paths and no feedback loops, in both the measurement model and structural model including three exogenous variables (i.e., age, sex, and self-assessed health) and four endogenous variables (i.e., PCS, age identity, self-actualization, and psychological well-being). Three sub-latent factors existed under PCS. In the initial model, all exogenous variables (i.e., age, sex, and self-assessed health) were assumed to be uncorrelated. Also, there was no covariance assumed between the disturbances or errors of each endogenous variable.

Prior to testing the hypotheses, which was the structural part of the model, the measure of the constructs was examined for adequacy. Construct reliability scores of all of the measures were greater than .78 and the results of CFA assured unidimensionality of the measures. An adequate level of discriminant validity was found. Thus, the PCS Scale including three PCS subscales with 19 items, Cognitive Age Scale with four items, and Life Satisfaction Index with four items was used for testing the structural part of the model.

Through several stages, the final model was modified to improve the fit. Four covariances were inserted into the model indicated by the modification indices and

resulted in an improved fit in spite of not having sufficient results from several fit indexes, producing GFI of .828, AGFI of .798, NFI of .841, RFI of .825, IFI of .936, RMSEA of .054, and RMR of 1.540. The ratio (χ^2/df) of 1.567 (less than 3.0) indicated overall good model fit. Thus, this final model was used for hypothesis testing.

Hypotheses were tested via significance and direction of individual parameter estimates. Hypothesis one predicted chronological age and sex to have a positive direct effect on the proximity of clothing to self and was supported. Older persons' chronological age had significantly positive impact on their level of PCS. Female elderly individuals were more likely to have a greater degree of psychological closeness of clothing to the self than were male elderly individuals. It is possible to say that the female elderly individuals have a higher tendency to incorporate clothing, one of various human-built environments, with themselves than do male elderly individuals. The male elderly individuals may have more interest in other objects or environments rather than clothing such as their cars, sports equipment, and so on.

Hypothesis 2, that the elderly person increased his or her level of age identity (perceived age) with increasing chronological age, was supported. This doesn't mean that an elderly individual's perceived age or age identity is older than his or her chronological age. It means that a person's age identity increases along with increasing one's chronological age over the life span. For example, if a 70 year-old person perceives his or her age as 60, then his or her perceived age (age identity) may likely increase to 70 when he or she reaches age 80 or 85.

All three hypothesized effects of self-assessed health on age identity, self-actualization, and psychological well-being (Hypotheses 3a, 3b, and 3c) were supported.

The path between self-assessed health and age identity was indeed negative and significant. Elderly individuals who assessed themselves as having good health felt younger than their actual chronological age. The paths of self-assessed health on both self-actualization and psychological well-being were positive and significant.

The significant impact of PCS on self-actualization was found for hypothesis 4; however, the path was negative rather than positive. This was opposite from the result that this researcher originally expected. It was concluded that elderly individuals whose selves were closely attached to one specific environmental object, here clothing, were not as highly self-actualized as those who didn't attach themselves so much to clothing. An explanation for this negative direct relationship of PCS on self-actualization is possible applying the need satisfaction theory. A self-actualization measurement (i.e., POI) measured the level of a self-actualized person. The result in this study could be interpreted as follows. An elderly person who has a high level of self-actualization has already met his or her needs; in other words, he or she was already fulfilled in his or her life so there was less need to use an object such as clothing to improve his or her fulfillment. Conversely, an elderly person who has a low level of self-actualization, may use an environmental object, such as clothing, to increase his or her self-fulfillment in daily life. Thus, clothing appears to be more important for those striving to fulfill the need for self-actualization than for those whose need is already fulfilled.

Hypothesis 5 predicted a negative, direct relationship between self-actualization and age identity, and was not supported. No relationship between the two concepts was found. Hypothesis 6 predicting a positive direct relationship between age identity and psychological well-being was supported and indicated that elderly individuals who had

younger age identity (i.e., feeling younger than one's chronological age) were more satisfied or experienced greater psychological well-being in their later life than those who felt themselves to be older. The positive direct effect of self-actualization on psychological well-being was examined in hypothesis 7, and the conclusion was drawn that an individual's level of self-actualization contributed to a higher level of psychological well-being. Whereas there was no direct effect of self-actualization and age identity on each other, separately they each have a significant impact on older persons' well-being.

Hypothesis 8 tested whether PCS had a positive, indirect impact on psychological well-being mediated by the self-actualization of older persons. The value of this indirect path was close to zero and negative, the latter because of the result from hypothesis 5 (the negative direct effect of PCS on self-actualization). In sum, the results indicated that elderly individuals' psychological well-being was affected by their self-assessed health, age identity, and self-actualization directly. PCS indirectly influenced individual's psychological well-being in a very slightly negative way in later life.

The last hypothesis examined the overall structural model for elderly individuals' psychological well-being, one component of successful aging, integrating all the variables selected for this study. The value of the ratio (χ^2/df) was 1.567 (< 3.0) and indicated adequate overall model fit although other fit indices didn't highly support an adequate level of fit. The unique variances (R^2) of each construct (i.e., self-actualization, PCS, age identity, and psychological well-being) explained by the model as a whole ranged from .10, .21, .45, to .18 respectively. Thus, it is concluded that other important variables exist that further explain these four constructs and finding these and developing

a model including these may improve the model fit.

The hypothesized model test was unique with respect to understanding the causal relationships of clothing and other variables in an older person's self-system using the structural equation modeling approach. It is also unique because of the attempt to continue using the PCS Scale that had been developed in the clothing and human science discipline and to build theoretical linkages among other variables with PCS. However, several limitations existed in this model and the researcher is aware of these. The initial, theoretical model did not incorporate all relevant variables such as clothing interest, clothing satisfaction, other domains of life (i.e., family life, friends), and various kinds of human needs (i.e., physiological, safety, belonging, and self-esteem). Inclusion of some other domains of life and the needs listed above may give a clearer picture of the elderly individual's self-system process and environmental resources important for aging successfully.

Research Objective 3

> Research objective 3 was to explore correlations among PCS subscales, age identity, and subscales of the Personal Orientation Inventory (POI), a measure of self-actualization.

In the SEM analysis, this researcher investigated only direct impacts of overall PCS on overall self-actualization and of overall self-actualization on age identity. No relationship among each of the confirmed PCS subscales with overall self-actualization or each subscale of self-actualization or with age identity was examined in the SEM analysis.

The results for hypothesis 4 showed significant causal relationship of PCS on self-actualization; however, the path was negative rather than positive as this researcher

originally anticipated. Correlation analysis among subscales of each construct supported the negative path effect of PCS on self-actualization. Under each of the three subscales of PCS Scale for all elderly individuals, overall self-actualization (SA) was negatively correlated with PCS Dimension 1-2-3, the *clothing in relation to self as structure – process* subscale and PCS Dimension 4-5, the *clothing in relation to self-esteem – evaluative and affective processes* subscale; however, no significant correlation was found between overall SA and PCS Dimension 6, the *clothing in relation to body image and body cathexis* subscale. Correlation analysis of the two major POI scales (i.e., time-competent and inner-directed) and overall SA were significantly, negatively correlated with all three PCS subscales only for the 75 to 84 year group, among the three age categories. These findings bring awareness that elderly individuals within this age category were different from those in the age category of 65 to 74 years and 85 years and over. Elderly individuals in this age range may be undergoing psychological transitions.

For the ten POI subscales across the three age categories, no significant correlation was found between the PCS subscales and the following POI subscales: self-actualizing value (SAV), self-regard (Sr), nature of man (Na), synergy (Sy), acceptance of aggression (A), and feeling reactivity (Fr). The POI subscales [i.e., extistentiality (Ex), spontaneity, and self-acceptance (Sa)] had significantly negative correlations with all three PCS subscales for the age category of 75 to 84 years. These results were discussed in the previous chapter.

Correlation analyses between each indicator of age identity and the PCS subscales revealed that the *look* item of AI and PCS Dimension 1-2-3 was negatively correlated for those 85 years and over. It may be interpreted that older persons who reach 85 years and

over use a human resource, clothing, to make themselves look younger than their chronological age and communicate their youthful self-image to others in social interaction. This examination discovered that elderly individuals' age identity does not have much relationship with PCS except for the very old.

From the correlation analyses of age identity with self-actualization, a negative correlation between overall AI and overall SA was found for all respondents before subdividing by the three age categories. No significant correlation was found for the time-competent scale of the POI with the overall AI and three AI indicators (i.e., *feel, look and interest* items). Through exploring the correlations among these two constructs, no positive correlations were found. Therefore, it is possible to say that elderly individuals who are highly self-actualized (i.e., having high level of self-fulfillment) perceive themselves younger than their chronological age. In other words, elderly individuals who have younger age identity have a tendency to be more self-actualized than those who have older age identity.

Limitations

The results of this study should be considered in light of the following limitations which originate from the response of the sample, data collection procedure, and measurements used in the study:

1. As previously mentioned in Chapter III, the elderly sample age 65 and above in the United States was randomly selected. The random sample list was purchased from the sampling company based on careful sampling direction by the researcher to provide a strong representative sampling frame. Overall, the respondents in this study were consistent with the U.S. elderly population in terms of the proportion by sex and age

category. However, the respondents were mostly from the White ethnic group; had higher education, higher income range, and had been employed in more professional–related occupations compared with the characteristics of the U.S. elderly population. This limits the ability to generalize to the entire U.S. population of elderly even though a national random sample was selected.

2. This research aimed to include elderly individuals living in their homes; thus, the unit on the sample list purchased from the sampling company was an elderly individual who was a head of the household at that time period. That means this sample did not include any elderly individual who lived in an institutional setting (i.e., assisted living center, nursing home). However, it doesn't guarantee responses from a person who lives in his or her own home because an elderly individual's health condition may change dramatically from time to time.
3. Because a relatively small sample size was obtained, a separate structural equation model (SEM) analysis by sex could not be performed in order to guarantee a sufficient number of subjects for the model testing. To solve the above problems, sex was included in a structural equation model test as a dummy variable. During the descriptive analysis of PCS, this researcher found that the elderly group whose age was 75 and over had different PCS level compared with other age ranges. However, a separate SEM analysis by different age categories (i.e., 65 to 74 years – young-old, 75 to 84 years – old-old, and 85 years and over – oldest old) was not possible because of the same reason that was mentioned above.

Several limitations were related to a mail survey procedure and survey instruments.

1. The Personal Orientation Inventory (POI) instrument was lengthy for elderly individuals to answer. This instrument included 150 items with two choices for each item. Elderly individuals also needed to respond on a computer scoring sheet (i.e., bubble sheet). It took around 30 to 60 minutes to answer 150 questions in the instrument according to the pre-test respondents. All of the above might lead to tiredness while filling in questionnaires and could cause them to give up responding to the survey and account in part at least for the low response rate.
2. The time period in which to conduct the survey was one of the limitations and may help explain the low survey response rate. According to various survey method guidebooks, a busy-season is not a good time to do a mail survey. This researcher was aware of this issue and tried to minimize this problem by sending out a first mailing, a follow-up postcard, and a second mailing of one questionnaire. However, the end of year 2004 through early 2005 was not a good time period to conduct the survey because of the holiday season and travel by older people to warmer environments during winter months.
3. The variables included in this study are not the only variables to have direct or indirect paths to psychological well-being. The initial, theoretical model did not incorporate all relevant variables such as clothing interest, clothing satisfaction, other domains (e.g., family life, friends), and various kinds of human needs (i.e., physiological, safety, belonging, and self-esteem). The researcher was highly aware that other unexplained important variables exist to impact the above construct, psychological well-being. Because of limited time frame and budget, this research couldn't include all those variables. However, the hypothesized model tested in this

study was unique with respect to understanding the causal relationships of clothing and other variables within a person's self-system using the structural equation modeling approach.

Implications and Recommendations

The overall purpose of this research was to contribute to theory development in the importance of clothing to the self and in the way that elderly individuals might age successfully by fulfilling the need for self-actualization by incorporating a primary resource environment, i.e., clothing, into their self-system.

Implications for Future Research

For future studies, several research directions need to be investigated. One major need addressed by this research was the further testing of the Proximity of Clothing to Self Scale (Sontag and Lee, 2004) on the elderly. Continuing from their research, this study further tested a valid, reliable, easily administered measurement instrument for the concept, *proximity of clothing to self*, for the elderly. Neither 6-factor nor 4-factor PCS Scales was confirmed for this age group (i.e., elderly individuals). A 3-factor PCS Scale was confirmed for this group of elderly. There are a few recommendations for future refinement and use of the PCS Scale. The 3-factor, 19-item PCS Scale resulting from CFA Round 3 should be tested again on an independent set of data with an elderly group. If the 3-factor model is confirmed again, then the 3-factor 19-item scale from Round 3 can be used with confidence in its content and construct validity and reliability with older persons. Further, it would be advantages to test the factor structure on samples of elderly covering narrower age ranges than that used in this study because the high correlation achieved among the PCS dimensions may be due in part to the wide age range used in

this study.

This research is important because it contributes to and builds upon continued use of the concept, PCS, that has been developed in the field of clothing and human sciences. In addition, this researcher indeed developed and posed hypotheses relating PCS to other human ecological concepts and tested the conceptual model using the SEM approach. The theoretical linkages that the model brought to light in this study can be further developed and refined to add other important human ecological concepts, such as ecological transitions, and build theory over the long term.

This research leads to other alternative suggestions for future research. Instead of exploring the relationships of age identity with or on other variables, differences or gaps between chronological age and age identity for older persons may provide more insight to understand successful aging. If older persons are too unrealistic about their chronological age, in other words, have very large differences between their chronological age and their perceived age, they may have a tendency to mal-adapt to life changes. Further research should be done focusing on this age gap with other variables such as various levels of needs (e.g., self-actualization) for the elderly population.

The instrument, POI, used in this study has been used many times in previous studies for clinical therapy purposes by examining the level of each POI subscale. However, little previous research has tried to use the POI as a construct to test directional relationships with other variables in a structural equation model. In particular, the overall self-actualization score which was a combined score of the time-competent scale score and inner-directed scale score has not been used very often in research studies. Therefore, the overall self-actualization didn't have any recognized reliability. Further effort is

needed to use this POI as a measure of self-actualization in the area of clothing and behavioral sciences. One option would be using the 10 POI subscales as an indicator of self-actualization instead of using the overall SA score. For different target subjects, specific POI subscales may perform differently; thus a researcher can select the best performing POI subscales when he or she conducts new research. Further in-depth research is necessary to explore the relationship of these POI subscales with various clothing variables. Table 29 summarizes the POI subscales that had negative correlations with age identity and PCS.

Table 29. *Summary of Personal Orientation Inventory Subscales that have Relationship with Age Identity and PCS*

POI subscales	Negative Correlation with the POI Subscale	
	PCS	Age Identity
Self-actualizing Value (SAV)		X [x]
Existentiality (Ex)	X [x]	X [x]
Feeling Reactivity (Fr)		X [x]
Spontaneity (S)	X [x]	X [x]
Self-regard (Sr)		X [x]
Self-acceptance (Sa)	X [x]	
Nature of Man (N)		[x]
Synergy (Sy)		[x]
Acceptance of Aggression (A)	X	X [x]
Capacity for Intimate Contact (Ca)	X [x]	X

Note. "X" indicates negative correlation for all respondents; [x] indicates negative correlation for the different age categories such as 65 to 74 years, 75 to 84 years, and 85 years and over.

This close-ended mail survey design is limited in terms of in-depth interpretation of the responses from elderly individuals. A different research design might reveal interesting facts or explanations that the survey design couldn't achieve. Longitudinal design can reveal effects that cannot be caught in cross sectional study. For instance, by comparing elderly individuals' reactions to and perceptions of the human-built

environment (i.e., clothing) and beliefs, values, and needs as they go through the process of aging, a researcher may have a clear and in-depth understanding of their self-system process when interacting with various environments. Performing on-site interviews several times during this suggested longitudinal study also will add more thorough understanding of their life changes. Further, it could provide more insight about how elderly individuals adapt to their transition periods from young-old to middle old to old-old.

The results of the proposed SEM model provide some insights that other important variables exist to make the model conform more closely to the theoretical propositions. This researcher used one of Maslow's (1970) higher needs, self-actualization, to develop linkages among PCS, age identity, and psychological well-being in this study. Here, clothing was considered as a coping strategy or needs satisfier to meet elderly individuals' self-actualization needs. This researcher suggests inserting other levels of needs in future research. Pedersen (1989) argued that clothing could be used as a needs satisfier to meet needs such as survival and safety, love and belonging, self-esteem, and self-actualization.

In sum, clothing may be used as a needs satisfier for different levels of needs or related more closely with needs in addition to self-actualization needs for the elderly. Further research should be conducted to explore relationships among PCS, different levels of human needs, and psychological well-being for this elderly group.

Implications for Practice

This study explored social/psychological aspects of elderly individuals' lives using psychological variables (i.e., PCS, age identity, self-assessed health, self-

actualization, and psychological well-being). In terms of an empirical approach, the benefit of this research lies in the possibilities for elderly individuals to use clothing as a resource to maintain or improve their daily activities or lives.

This researcher originally proposed a positive direct relationship of PCS on self-actualization but this hypothesis didn't hold up, rather the relationship was negative. This result doesn't mean that clothing hinders an individual's level of self-actualization or self-fulfillment. A self-actualized person who had already met the highest level of needs may have more ability to choose from a variety of environmental objects to be more creative and active in everyday life. The other explanation is that a person who hasn't met this level yet, can use clothing as a facilitator or need satisfier to meet a higher level of self-actualization. Some educational or training programs through local senior community centers or universities may be helpful to teach the use of clothing (or other human-built objects) as a tool or need satisfier to contribute to success in a person's later life. In the long run considering that life expectancy has increased over time, this researcher has a strong belief that this practice could lead elderly individuals to maintain and continue their healthy lives along with aging.

APPENDICES

Appendix A

UCRIHS Approval Letter

MICHIGAN STATE
UNIVERSITY

Initial IRB Application Approval

November 3, 2004

To: M. Suzanne Sontag
206c Human Ecology

Re: **IRB # 04-820** Category: EXPEDITED 2-7
Approval Date: November 3, 2004
Expiration Date: November 2, 2005

Title: ECOLOGICAL THEORY CONSTRUCTION IN CLOTHING AND THE SELF

The University Committee on Research Involving Human Subjects (UCRIHS) has completed their review of your project. I am pleased to advise you that **your project has been approved.**

The committee has found that your research project is appropriate in design, protects the rights and welfare of human subjects, and meets the requirements of MSU's Federal Wide Assurance and the Federal Guidelines (45 CFR 46 and 21 CFR Part 50). The protection of human subjects in research is a partnership between the IRB and the investigators. We look forward to working with you as we both fulfill our responsibilities.

Renewals: UCRIHS approval is valid until the expiration date listed above. If you are continuing your project, you must submit an *Application for Renewal* application at least one month before expiration. If the project is completed, please submit an *Application for Permanent Closure*.

Revisions: UCRIHS must review any changes in the project, prior to initiation of the change. Please submit an *Application for Revision* to have your changes reviewed. If changes are made at the time of renewal, please include an *Application for Revision* with the renewal application.

Problems: If issues should arise during the conduct of the research, such as unanticipated problems, adverse events, or any problem that may increase the risk to the human subjects, notify UCRIHS promptly. Forms are available to report these issues.

Please use the IRB number listed above on any forms submitted which relate to this project, or on any correspondence with UCRIHS.

Good luck in your research. If we can be of further assistance, please contact us at 517-355-2180 or via email at UCRIHS@msu.edu. Thank you for your cooperation.

Sincerely,

Peter Vasilenko, Ph.D.
UCRIHS Chair

c: Young-A Lee
204 Human Ecology

OFFICE OF
RESEARCH ETHICS AND STANDARDS
University Committee on Research Involving Human Subjects
Michigan State University
202 Olds Hall
East Lansing, MI
48824
517/355-2180
FAX 517/432-4503
Web www.msu.edu/user/ucrihs
E-Mail ucrihs@msu.edu

Appendix B

Pretest Cover Letter

MICHIGAN STATE
UNIVERSITY

November 15, 2004

To Whom It May Concern:

As researchers at Michigan State University, we are conducting a survey of older persons who are aged 65 and over to understand the ways in which clothing may support one's self as one goes through daily life. Although a significantly growing number of people are aged 65 and over, very little research has focused on the role of clothing in the enhancement of the aging process. In particular, does clothing affect how you feel about yourself, your health, and your ability to realize your full potential?

You may ask, "Why clothing?" Of course, clothing is one of only many resources that people may use to express themselves, to communicate with others, or to function in various environments. We chose to study clothing because it is something that people take with them wherever they go, and most people have control over what they wear. As a result of this research, we hope to discover various ways that clothing may contribute to the ability to age successfully. Whether or not you personally believe that clothing is important in your life, your assistance is very important to help us obtain a comprehensive view of the range of clothing's importance to older persons' everyday life.

COLLEGE OF
HUMAN ECOLOGY
Department of Human Environment and Design
Michigan State University
204 Human Ecology Building
East Lansing, Michigan
48824-1030
(517) 355-7712
FAX (517) 432-1058

Before sending out the main survey to a large number of people, we ask you to help us pretest the questionnaires. We would like your input in clarity of directions, approximate time spent on completing each questionnaire, your interest in the study, and so on.

Enclosed are two survey questionnaires that we ask you to complete. Please complete "*Clothing and Human Potential: A Resource for Successful Aging?*" questionnaire first and then complete *Personal Orientation Inventory*. You may wish to take a short break after completing the first questionnaire and before starting the second. At the top of each questionnaire, please record the number of minutes it took to complete each questionnaire and also record any breaks you took. Feel free to write any comment on the questionnaires.

Participation in this pre-test is voluntary, and you are free to withdraw your participation at any time. Completing and returning these questionnaires imply your voluntary agreement to participate in this study. The information you provide will

be combined with that of other participants, and your privacy will be protected to the maximum extent allowable by law. Your name will not be reported or made public. Research data will be aggregated for any presentation or publication.

On the enclosed, computer-scored response sheet for the *Personal Orientation Inventory*, please do not record your name and other personal information. Use it only to record the responses to the statements. This will help us preserve the confidentiality of your responses.

When you have finished, Young-A Lee will meet you to learn your response to the study. After meeting with you and receiving the two completed questionnaires, your name will be entered in a lottery with the names of other pre-test respondents. We will draw the names of five winners at random. First and second winners will be awarded $50 and $20, respectively. Each of the next three winners will be awarded $10.

If you have questions about this project, please contact the project investigator, Dr. M. Suzanne Sontag at 517-353-2939/e-mail: sontag@msu.edu or the graduate student, Young-A Lee at 517-272-4609/e-mail: leeyou12@msu.edu or FAX at 517-432-1058 or regular mail: 204 Human Ecology, East Lansing, MI 48824. If you have questions about being a research participant, you may contact Dr. Peter Vansilenko, Chair of the University Committee on Research Involving Human Subjects (UCRIHS) by phone: 517-355-2180, FAX: 517-432-4503, e-mail: ucrihs@msu.edu, or regular mail: 202 Olds Hall, East Lansing, MI 48824.

We thank you for your time and cooperation in completing these questionnaires. Your contribution to this research is greatly appreciated!

Sincerely,

M. Suzanne Sontag, Ph.D.
Professor and Project Director

Young-A Lee, M.A.
Doctoral Candidate

Enclosures

Appendix C

Follow-up Interview Questionnaire for Pretest Respondents

Respondent's Age : _____ Respondent's Sex: _____

Time to complete "*Clothing and Human Potential A Resource for Successful Aging?*" questionnaire: _____ minutes

Time to complete "*Personal Orientation Inventory*" questionnaire: _____ minutes

Clarity of directions:

_____
_____
_____

Readability of font and font size:

_____
_____
_____

Length of time to complete the questionnaire 1 and questionnaire 2:

_____
_____
_____

Break-time between two questionnaires:

_____
_____
_____

Interest in the study as reflected in the title:

_____
_____
_____

Please rate the attractiveness of the title on the following scales. On a scale of 0 to 10, where *0* indicates *not attractive at all* and *10* indicates *very highly attractive*, please circle the number which best represents your attractiveness.

Not attractive at all . . . . . Very highly attractive

0 . . . . 1 . . . . 2 . . . . 3 . . . . 4 . . . . 5 . . . . 6 . . . . 7 . . . . 8 . . . . 9 10

Clarity/Issues of a cover letter:

_____
_____
_____

Completeness:

_____
_____
_____

Personal background information:

Incentive:

Other comments of respondent:

Other comments/observations of researcher:

Appendix D

Cover Letter for the First Mailing

MICHIGAN STATE
UNIVERSITY

November 29, 2004

An Invitation to Participate in Research

As researchers at Michigan State University, we are conducting a survey of older persons who are aged 65 and over to understand the ways in which clothing may support one's self as one goes through daily life. Although a growing number of people are aged 65 and over, little research has focused on the role of clothing on the enhancement of the aging process. In particular, does clothing affect how you feel about yourself, your health, and your ability to realize your potential?

"Why clothing?" Of course, clothing is one of only many resources that people may use to express themselves, to communicate with others, or to function in various environments. We chose to study clothing because it is something that people take with them wherever they go, and most people have control over what they wear. As a result of this research, we hope to discover various ways that clothing may contribute to the ability to age successfully. Whether or not you personally believe that clothing is important in your life, your assistance will help us obtain a comprehensive view of the range of clothing's importance to older persons' everyday life.

Enclosed are two survey questionnaires that we ask you to complete. Please complete the questionnaire, *Clothing: A Resource for Successful Aging?*, first and then complete the *Personal Orientation Inventory*. It will take you approximately 60 to 75 minutes to answer the questions. You may wish to take a short break after completing the first questionnaire and before starting the second.

COLLEGE OF
HUMAN ECOLOGY
Department of Human Environment and Design
Michigan State University
204 Human Ecology Building
East Lansing, Michigan
48824-1030
(517) 355-7712
FAX: (517) 432-1058

On the enclosed, computer-scored response sheet for the *Personal Orientation Inventory*, please use a No. 2 pencil but do not record your name and other personal information. Use it only to record the responses to the statements. This will help us preserve the confidentiality of your responses.

When you have finished, please return 1) the two questionnaires and 2) the response sheet for the *Personal Orientation Inventory* to us in the business reply envelope within the next two weeks. When we receive your packet, your name will be entered in a lottery with the names of other respondents if you complete and return the enclosed card. On the week of January 17, 2005, we will draw the names of eight winners at random. First, second, and third winners will be awarded $100, $50, and $25, respectively. Each of the next five winners will be awarded $10. If you wish to receive a summary of the results of this study, please indicate this on the bottom of p.5 of the first questionnaire.

Participation in this research is voluntary, and you are free to withdraw your participation at any time. Completing and returning these questionnaires imply your voluntary agreement to participate in this study. The information you provide will be combined with that of other participants, and your privacy will be protected to the

maximum extent allowable by law. Your name will not be reported or made public. Research data will be aggregated for any presentation or publication.

If you have questions about this project, please contact the project investigator, Dr. M. Suzanne Sontag at 517-353-2939/e-mail: sontag@msu.edu or the graduate student, Young-A Lee at 517-272-4609/e-mail: leeyou12@msu.edu or FAX at 517-432-1058 or regular mail: 204 Human Ecology, East Lansing, MI 48824. If you have questions about being a research participant, you may contact Dr. Peter Vansilenko, Chair of the University Committee on Research Involving Human Subjects (UCRIHS) by phone: 517-355-2180, FAX: 517-432-4503, e-mail: ucrihs@msu.edu, or regular mail: 202 Olds Hall, East Lansing, MI 48824.

We thank you for your time and cooperation in completing these questionnaires. Your contribution to this research is greatly appreciated!

Sincerely,

M. Suzanne Sontag, Ph.D.
Professor and Project Director

Young-A Lee, M.A.
Doctoral Candidate

Enclosures

Appendix E

Lottery Cards

Lottery Card for the First Mailing:

MICHIGAN STATE
UNIVERSITY

If you would like your name to be entered in a lottery, please fill in the information below and return in the business reply envelope with the two completed questionnaires and computer-scored response sheet.

Name: _____

Address: _____

_____

City: _____

State/Zip: _____

Lottery Card for the Second Mailing:

MICHIGAN STATE
UNIVERSITY

If you would like your name to be entered in a lottery and to receive a summary of the results of this study, please fill in the information below and return in the business reply envelope with the completed questionnaire.

Name: _____

Address: _____

_____

City: _____

State/Zip: _____

Appendix F

Clothing: A Resource for Successful Aging?

Clothing and the Self

in Everyday Life

Department of Human Environment and Design
College of Human Ecology
204 Human Ecology
Michigan State University
East Lansing, MI 48824-1030

I. DIRECTIONS: The first set of items is a list of statements that describe the way clothing may or may not relate to your self. Read each statement carefully and decide how often each statement is true of you. Then place a number between *1* and *6* in the space to the left of the statement according to the following scale.

1 = The statement is *never or almost never* true of me.
2 = The statement is *usually not* true of me.
3 = The statement is *sometimes* true of me.
4 = The statement is *often* true of me
5 = The statement is *usually* true of me.
6 = The statement is *always or almost always* true of me.

1	2	3	4	5	6
Never or almost never true of me	Usually not true of me	Sometimes true of me	Often true of me	Usually true of me	Always or almost always true of me

_____ 1. Certain clothes make me feel good about myself.

_____ 2. What I wear and the way I wear it show others my attitudes.

_____ 3. My clothing reflects how I feel about myself.

_____ 4. Dressing up makes me feel important.

_____ 5. I care about what other people think of how I look in my clothes.

_____ 6. When I'm dissatisfied with a part of my body, I wear clothing that draws attention away from it.

_____ 7. What I wear is who I am.

_____ 8. It matters to me that people make judgments about the type of person I am by the way I dress.

_____ 9. When I feel good about what I am wearing, then I have confidence in myself.

_____ 10. I choose clothes that accent the parts of my body that I like.

_____ 11. I try to project a certain image of myself to others through my clothing.

_____ 12. I feel better about myself when I am well dressed.

_____ 13. When I buy clothing that looks good on me, I feel satisfied with my body.

_____ 14. I want my clothes to make a statement about me without any need for words.

_____ 15. I'm careful in wearing certain styles or brands of clothing because they affect how people respect me.

_____ 16. When I feel good about myself, I take care in getting dressed.

(Go to next page)

1	2	3	4	5	6
Never or almost never true of me	Usually not true of me	Sometimes true of me	Often true of me	Usually true of me	Always or almost always true of me

_____ 17. My clothing is a part of me, not just a simple possession.

_____ 18. The way I dress is important in giving me a sense of being in control of my life.

_____ 19. The clothes I wear help me to be who I am.

_____ 20. My self-confidence increases when I dress appropriately.

_____ 21. Taking time to dress up gives me a feeling of pride in how I look.

_____ 22. Through my clothing, I can show my values to others.

_____ 23. The way my clothing fits affects the way I feel about my body.

_____ 24. How I look in my clothing is important because I want others to accept me.

_____ 25. The clothes I like to wear help me feel self-assured.

_____ 26. I often wear certain clothing to let people know what kind of person I am.

_____ 27. I feel good about myself when I have something new to wear.

_____ 28. I avoid certain styles or colors in clothing that do not enhance my body build or figure.

_____ 29. I am a certain type of person, and my clothes reflect that.

_____ 30. When I look good in my clothes, I feel good about myself.

_____ 31. I look best in my clothing when I'm at the right weight for me.

_____ 32. What I wear is consistent with who I am.

_____ 33. My clothing shows others how I think and feel about myself.

_____ 34. When I wear clothes that make me feel good, I am better able to talk with others.

_____ 35. When I look good in what I wear, I feel content with myself.

_____ 36. I try to buy clothing that makes me feel attractive.

_____ 37. Clothes help me become the person I want to be.

_____ 38. My clothing gives others an idea about my interests or activities.

_____ 39. I wear certain clothing styles to change the way my body looks.

_____ 40. Good quality clothes that look good on me make me feel competent.

(Go to next page)

II. DIRECTIONS: Here are some statements regarding life in general. Please read each statement on this list and rate the level of your agreement on the following scale. For example, if you *strongly disagree* with it, circle the number, *1*. If you *strongly agree* with a statement, circle the number, *5*. If you are not sure, circle the number 3, and so on.

	Strongly Disagree				Strongly Agree
1. I am just as happy as when I was younger.	1	2	3	4	5
2. These are the best years of my life.	1	2	3	4	5
3. This is the dreariest time of my life.	1	2	3	4	5
4. Most of the things I do are boring or monotonous.	1	2	3	4	5
5. Compared to other people, I get down in the dumps too often.	1	2	3	4	5
6. The things I do are as interesting to me as they ever were.	1	2	3	4	5
7. I have made my plans for things I'll be doing a month or a year from now.	1	2	3	4	5
8. As I grow older, things seem better than I thought they would be.	1	2	3	4	5
9. As I look back on my life, I am fairly well satisfied.	1	2	3	4	5
10. I've gotten pretty much what I expected out of life.	1	2	3	4	5
11. When I think back over my life, I didn't get most of the important things I wanted.	1	2	3	4	5
12. In spite of what people say, the lot of the average person is getting worse, not better.	1	2	3	4	5
13. I have gotten more of the breaks in life than most of the people I know.	1	2	3	4	5

In your own words, how does clothing help you through the aging process? _____

_____

_____

_____

(Go to next page)

III. DIRECTIONS: Please rate your current overall health on the following scales. On a scale of 0 to 10, where *0* indicates *poor health*, *5* indicates *average health*, and *10* indicates *excellent health*, please circle the number which best represents your health.

Very Poor					Average Health					Excellent Health
0	1	2	3	4	5	6	7	8	9	10

How many times in the last six months were you so sick that you were unable to carry out your usual activities? Place a check in the bracket next to the frequency that applies to you.

		Less than		More than
[ ] None	[ ] Once	[ ] 5 Times	[ ] 5 to 10 Times	[ ] 10 Times

IV. DIRECTIONS: Please specify which of these age decades you FEEL you really belong to: twenties, thirties, forties, fifties, sixties, seventies, eighties, or nineties. Please indicate one decade for each statement.

	20s	30s	40s	50s	60s	70s	80s	90s
a. I FEEL as though I am in my	___	___	___	___	___	___	___	___
b. I LOOK as though I am in my	___	___	___	___	___	___	___	___
c. I DO most things as though I were in my	___	___	___	___	___	___	___	___
d. MY INTERESTS are mostly those of a person in her	___	___	___	___	___	___	___	___

V. PERSONAL BACKGROUND INFORMATION

DIRECTIONS: The following questions will help us gain a better understanding of the people participating in this study.

1. In what year were you born? _____
2. Your sex: Male [ ] Female [ ]
3. With whom do you reside?

   [ ] Alone [ ] With spouse [ ] With relative(s) [ ] With friend(s)

   [ ] Other (Please explain) _____

   _____

(Go to next page)

4. Are you currently (Please check one or more than one category below that applies to you)

[ ] Employed full-time
[ ] Employed part-time
[ ] Temporarily unemployed
[ ] Retired
[ ] Unemployed, looking for job
[ ] Full-time volunteer work
[ ] Part-time volunteer work
[ ] Other? (Please specify) _____
_____

5. What is/was your most recent job title or occupation in paid work? _____

6. Are you Hispanic or Latino? [ ] Yes
[ ] No

7. Which category below best describes you?

[ ] White
[ ] Black or African American
[ ] Asian
[ ] American Indian or Alaska Native
[ ] Native Hawaiian or Other Pacific Islander
[ ] Other? (Please specify) _____

8. Please indicate your total personal income from all sources before taxes in 2003.

[ ] Less than $5,000
[ ] $5,000 to $7,499
[ ] $7,500 to $9,999
[ ] $10,000 to $12,499
[ ] $12,500 to $14,999
[ ] $15,000 to $19,999
[ ] $20,000 to $27,499
[ ] $27,500 to $34,999
[ ] $35,000 to $49,999
[ ] $50,000 or over

9. What is the highest year of schooling you have completed? (Please circle one)

None								00
Elementary	01	02	03	04	05	06	07	08
High school					09	10	11	12
College					13	14	15	16
Some graduate								17
Graduate or professional degree								18

If you wish to receive a summary of the results of this study, please check here. _____

You may wish to take a break before you continue with the *Personal Orientation Inventory*.

Appendix G

Personal Orientation Inventory (POI)

Measuring self-actualization is performed by administering the

Personal Orientation Inventory

By

Everett L. Shostrom

The Educational and Industrial Testing Service, San Diego, California

Appendix H

Follow-up Postcard

Dr. M. Suzanne Sontag
Department of Human Environment and Design
Michigan State University
204 Human Ecology Building
East Lansing, MI 48824-1030

During the week of December 6, you should have received a research packet, *Clothing: A Resource for Successful Aging?* If you have not yet completed and returned this survey, please do so now. Your response is crucial for a complete picture of an older person's aging process in one's daily life. If you have already returned it, please disregard this notice.

If you wish to receive a summary of the results of this study and would like your name to be entered in a lottery, please complete the information on the lottery card that we included in the packet and return the each in the business reply envelope with the two completed questionnaires and computer-scored response sheet.

Thank you for your cooperation and participation.

Sincerely,

M. Suzanne Sontag, Ph.D.
Professor and Project Director

Young-A Lee, M.A.
PhD Candidate

Michigan State University

Appendix I

Cover Letter for the Second Mailing

MICHIGAN STATE
UNIVERSITY

January 24, 2005

A gentle reminder –
Your participation in this research is important to us!

As researchers at Michigan State University, we are conducting a survey of older persons who are aged 65 and over to understand the ways in which clothing may support one's self as one goes through daily life. Whether or not you personally believe that clothing is important in your life, your assistance will help us obtain a comprehensive view of the range of clothing's importance to older persons' everyday life.

During the week of December 6, you should have received a research packet with two questionnaires. If you do not have enough time to complete both questionnaires and have not yet returned them, please complete only the first questionnaire, *Clothing: A Resource for Successful Aging?* It will take you approximately 10 minutes to answer the questions. For your convenience, we enclose another copy of the questionnaire. Please complete and return it with the enclosed lottery card to us in the business reply envelope within the next two weeks.

The first lottery for those completing both questionnaires was awarded on January 17. However, we will have a second lottery for those completing only one questionnaire. When we receive the completed questionnaire and lottery card, your name will be entered in a lottery with the names of other respondents. During the week of February 14, 2005, we will draw the names of five winners at random. First and second winners will be awarded $50 and $20, respectively. Each of the next three winners will be awarded $10. If you wish to receive a summary of the results of this study, please indicate this on the bottom of p.5 of the questionnaire and be sure to return the enclosed card.

We thank you for your time and cooperation in completing the questionnaire. Your contribution to this research is greatly appreciated!

Sincerely,

COLLEGE OF
HUMAN ECOLOGY
Department of Human Environment and Design
Michigan State University
204 Human Ecology Building
East Lansing, Michigan
48824-1030
(517) 355-7712
FAX (517) 432-1058

M. Suzanne Sontag, Ph.D.
Professor and Project Director

Phone: 517-353-2939
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Doctoral Candidate

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Enclosures

Appendix J

Proximity of Clothing to Self Scale:
40 Items in the Initial Set for Six PCS Dimensions

Proximity of Clothing to Self Scale:
40 Items in the Initial Set for Six PCS Dimensions

Dimension #/ Variable	PCS Dimension Name/Item
Dimension 1:	**Clothing in Relation to Self as Structure** (7 items)
PCSD105	What I wear is consistent with who I am.
PCSD106	My clothing is a part of me, not just a simple possession.
PCSD107	Clothes help me become the person I want to be.
PCSD108	The clothes I wear help me to be who I am.
PCSD109	My clothing reflects how I feel about myself.
PCSD111	I am a certain type of person, and my clothes reflect that.
PCSD1_40	What I wear is who I am.
Dimension 2:	**Clothing in Relation to Self as Process – Communication of Self to Others** (7 items)
PCSD202	My clothing gives others an idea about my interests or activities.
PCSD203	My clothing shows others how I think and feel about myself.
PCSD204	I try to project a certain image of myself to others through my clothing.
PCSD207	I often wear certain clothing to let people know what kind of person I am.
PCSD208	I want my clothes to make a statement about me without any need for words.
PCSD211	What I wear and the way I wear it show others my attitudes.
PCSD212	Through my clothing, I can show my values to others.
Dimension 3:	**Clothing in Relation to Self as Process – Response to Judgments of Others** (4 items)
PCSD302	How I look in my clothing is important because I want others to accept me.
PCSD309	It matters to me that people make judgments about the type of person I am by the way I dress.
PCSD312	I care about what other people think of how I look in my clothes.
PCSD313	I'm careful in wearing certain styles or brands of clothing because they affect how people respect me.

Dimension #/ Variable	PCS Dimension Name/Item
Dimension 4:	**Clothing in Relation to Self-esteem – Evaluative Process Dominant** (8 items)
PCSD402	The clothes I like to wear help me feel self-assured.
PCSD403	My self-confidence increases when I dress appropriately.
PCSD404	I try to buy clothing that makes me feel attractive.
PCSD406	When I wear clothes that make me feel good, I am better able to talk with others.
PCSD407	Dressing up makes me feel important.
PCSD409	Good quality clothes that look good on me make me feel competent.
PCSD410	The way I dress is important in giving me a sense of being in control of my life.
PCSD413	When I feel good about what I am wearing, then I have confidence in myself.
Dimension 5:	**Clothing in Relation to Self-esteem – Affective Process Dominant** (7 items)
PCSD502	Certain clothes make me feel good about myself.
PCSD506	Taking time to dress up gives me a feeling of pride in how I look.
PCSD507	When I look good in what I wear, I feel content with myself.
PCSD508	When I look good in my clothes, I feel good about myself.
PCSD509	When I feel good about myself, I take care in getting dressed.
PCSD511	I feel good about myself when I have something new to wear.
PCSD513	I feel better about myself when I am well dressed.
Dimension 6:	**Clothing in Relation to Body Image and Body Cathexis** (7 items)
PCSD603	I look best in my clothing when I'm at the right weight for me.
PCSD605	I avoid certain styles or colors in clothing that do not enhance my body build or figure.
PCSD608	I wear certain clothing styles to change the way my body looks.

Dimension #/ Variable	PCS Dimension Name/Item
PCSD609	The way my clothing fits affects the way I feel about my body.
PCSD610	When I'm dissatisfied with a part of my body, I wear clothing that draws attention away from it.
PCSD611	I choose clothes that accent the parts of my body that I like.
PCSD613	When I buy clothing that looks good on me, I feel satisfied with my body.

Appendix K

Covariance Matrices

Covariance Matrix 1: PCS CFA ($N_{1+2} = 250$)

	Mean	SD	PCSD 105	PCSD 106	PCSD 107	PCSD 108	PCSD 109	PCSD 111
PCSD105	3.96	1.52	2.299					
PCSD106	3.55	1.59	1.277	2.530				
PCSD107	3.12	1.66	1.367	1.647	2.768			
PCSD108	3.69	1.65	1.629	1.816	1.741	2.712		
PCSD109	4.25	1.40	.943	1.219	1.169	1.239	1.956	
PCSD111	3.57	1.59	1.692	1.398	1.488	1.561	1.065	2.519
PCSD1_40	4.05	1.63	1.195	1.456	1.106	1.549	1.185	1.242
PCSD202	3.36	1.58	1.217	1.655	2.143	1.562	1.189	1.439
PCSD203	3.76	1.57	1.443	1.678	1.829	1.689	1.229	1.547
PCSD204	3.28	1.52	1.121	1.366	1.366	1.538	1.181	1.292
PCSD207	2.80	1.55	1.224	1.419	1.824	1.541	.930	1.335
PCSD208	3.47	1.70	1.338	1.503	1.761	1.704	1.419	1.534
PCSD211	3.72	1.53	1.228	1.309	1.252	1.354	1.457	1.162
PCSD212	3.13	1.62	1.259	1.510	1.815	1.703	1.167	1.439
PCSD302	3.14	1.56	1.014	1.158	1.584	1.438	.887	1.147
PCSD309	3.12	1.65	.740	1.141	1.251	1.225	1.015	.922
PCSD312	4.13	1.60	.929	1.195	1.317	1.273	1.421	1.003
PCSD313	2.56	1.61	1.053	1.196	1.517	1.421	.936	1.245
PCSD402	3.85	1.62	1.271	1.543	1.713	1.806	1.286	1.426
PCSD403	4.32	1.49	1.147	1.382	1.370	1.649	1.272	1.303
PCSD404	4.15	1.66	1.276	1.338	1.636	1.493	1.106	1.431
PCSD406	3.37	1.62	1.241	1.518	1.713	1.673	1.095	1.394
PCSD407	3.63	1.68	.795	1.269	1.090	1.331	1.199	1.144
PCSD409	3.93	1.63	1.077	1.441	1.700	1.552	1.123	1.326
PCSD410	3.60	1.68	1.267	1.901	1.681	2.164	1.259	1.387
PCSD413	4.52	1.34	.902	1.184	1.048	1.317	1.262	.884
PCSD502	4.64	1.27	.723	.935	.780	.891	1.084	.810
PCSD506	4.23	1.53	1.034	1.509	1.377	1.528	1.268	1.155
PCSD507	4.18	1.51	1.100	1.365	1.395	1.527	1.050	1.277
PCSD508	4.55	1.43	1.056	1.281	1.237	1.310	1.066	1.254
PCSD509	4.06	1.54	1.079	1.515	1.395	1.559	1.404	1.193
PCSD511	3.70	1.59	.850	1.199	1.567	1.354	1.055	1.080
PCSD513	4.54	1.44	.843	1.187	1.193	1.180	1.220	.987
PCSD603	4.59	1.44	1.159	.817	1.067	1.097	.771	1.082
PCSD605	3.84	1.72	1.234	1.134	1.268	1.293	1.007	1.418
PCSD608	3.07	1.55	1.015	1.221	1.477	1.376	.873	1.164
PCSD609	4.03	1.52	1.266	1.332	1.345	1.544	1.040	1.275
PCSD610	3.56	1.75	.884	.903	.838	1.076	1.000	.908
PCSD611	3.26	1.66	1.136	1.260	1.292	1.367	1.122	1.219
PCSD613	4.27	1.52	.984	1.367	1.400	1.376	1.185	1.148

	PCSD 1_40	PCSD 202	PCSD 203	PCSD 204	PCSD 207	PCSD 208	PCSD 211	PCSD 212
PCSD1_40	2.664							
PCSD202	1.171	2.506						
PCSD203	1.236	1.795	2.464					
PCSD204	1.095	1.386	1.329	2.301				
PCSD207	1.026	1.639	1.558	1.318	2.402			
PCSD208	1.471	1.643	1.608	1.741	1.661	2.877		
PCSD211	1.223	1.341	1.329	1.503	1.288	1.745	2.341	
PCSD212	1.134	1.675	1.654	1.484	1.890	1.793	1.479	2.621
PCSD302	.865	1.510	1.231	1.188	1.631	1.598	1.250	1.648
PCSD309	.886	1.239	1.120	1.348	1.256	1.459	1.250	1.410
PCSD312	1.054	1.395	1.276	1.293	1.074	1.570	1.466	1.332
PCSD313	1.029	1.447	1.387	1.291	1.489	1.624	1.138	1.621
PCSD402	1.152	1.604	1.651	1.412	1.545	1.781	1.355	1.546
PCSD403	1.145	1.365	1.378	1.318	1.229	1.636	1.220	1.351
PCSD404	1.173	1.587	1.519	1.338	1.195	1.607	1.268	1.361
PCSD406	.990	1.567	1.543	1.263	1.512	1.735	1.202	1.569
PCSD407	1.403	1.200	1.143	1.307	1.231	1.638	1.372	1.387
PCSD409	1.068	1.609	1.412	1.261	1.391	1.749	1.232	1.479
PCSD410	1.542	1.694	1.613	1.537	1.618	1.697	1.503	1.825
PCSD413	1.027	1.119	1.085	1.169	.835	1.364	1.104	.983
PCSD502	.720	.852	.792	.975	.766	1.084	1.069	.779
PCSD506	1.166	1.471	1.449	1.361	1.202	1.643	1.190	1.484
PCSD507	1.003	1.362	1.378	1.124	1.246	1.519	1.097	1.361
PCSD508	1.038	1.201	1.240	1.169	1.010	1.379	1.044	1.172
PCSD509	1.182	1.433	1.507	1.354	1.108	1.676	1.309	1.266
PCSD511	.866	1.437	1.262	1.149	1.354	1.441	.944	1.344
PCSD513	1.074	1.223	1.195	1.327	.965	1.481	1.256	1.093
PCSD603	.594	1.050	1.061	.800	.716	.942	.742	.898
PCSD605	1.032	1.121	1.248	1.008	.929	1.275	.960	.908
PCSD608	.820	1.452	1.234	.951	1.300	1.199	.868	1.272
PCSD609	1.075	1.494	1.361	1.288	1.267	1.459	1.061	1.438
PCSD610	.869	.990	.869	1.131	.758	1.006	.954	.894
PCSD611	1.192	1.080	1.140	1.447	1.005	1.433	1.184	1.077
PCSD613	1.132	1.320	1.314	1.261	1.154	1.648	1.185	1.310

	PCSD 302	PCSD 309	PCSD 312	PCSD 313	PCSD 402	PCSD 403	PCSD 404	PCSD 406
PCSD302	2.445							
PCSD309	1.485	2.713						
PCSD312	1.263	1.567	2.554					
PCSD313	1.574	1.429	1.270	2.601				
PCSD402	1.608	1.154	1.328	1.380	2.625			
PCSD403	1.347	1.111	1.348	1.123	1.762	2.210		
PCSD404	1.191	1.083	1.438	1.248	1.679	1.513	2.756	
PCSD406	1.516	1.101	1.338	1.399	1.907	1.503	1.586	2.612
PCSD407	1.383	1.304	1.369	1.256	1.214	1.240	1.254	1.187
PCSD409	1.348	1.229	1.314	1.281	1.784	1.613	1.866	1.698
PCSD410	1.516	1.336	1.293	1.515	1.828	1.664	1.503	1.721
PCSD413	.969	1.080	1.230	.951	1.330	1.435	1.302	1.159
PCSD502	.571	.512	.870	.597	1.054	1.093	.971	.839
PCSD506	1.409	1.174	1.485	1.298	1.897	1.786	1.580	1.622
PCSD507	1.259	1.027	1.278	1.198	1.855	1.579	1.699	1.674
PCSD508	1.126	.968	1.163	.987	1.579	1.523	1.607	1.313
PCSD509	1.233	1.094	1.427	1.374	1.816	1.669	1.481	1.457
PCSD511	1.292	.994	1.159	1.213	1.763	1.416	1.523	1.536
PCSD513	1.038	1.065	1.448	.953	1.466	1.524	1.467	1.255
PCSD603	.855	.735	.892	.712	1.208	1.016	1.268	1.021
PCSD605	.918	.737	1.040	.959	1.394	1.275	1.570	1.331
PCSD608	1.198	.827	.947	1.169	1.436	1.258	1.399	1.543
PCSD609	1.232	1.133	1.233	1.211	1.683	1.504	1.638	1.422
PCSD610	.638	.855	1.029	.902	1.199	1.143	1.281	1.025
PCSD611	.886	.877	1.087	1.158	1.304	1.216	1.498	1.183
PCSD613	1.174	1.065	1.227	1.152	1.574	1.360	1.357	1.406

	PCSD 407	PCSD 409	PCSD 410	PCSD 413	PCSD 502	PCSD 506	PCSD 507	PCSD 508
PCSD407	2.821							
PCSD409	1.379	2.645						
PCSD410	1.516	1.690	2.836					
PCSD413	1.311	1.267	1.327	1.793				
PCSD502	.916	1.106	.973	.933	1.606			
PCSD506	1.455	1.691	1.679	1.375	1.003	2.345		
PCSD507	1.237	1.720	1.528	1.237	1.007	1.661	2.287	
PCSD508	1.233	1.606	1.375	1.300	.995	1.589	1.702	2.032
PCSD509	1.334	1.490	1.577	1.465	1.008	1.835	1.580	1.503
PCSD511	1.271	1.509	1.434	1.275	.832	1.642	1.581	1.496
PCSD513	1.368	1.393	1.405	1.347	1.074	1.594	1.357	1.347
PCSD603	.601	1.103	.861	.793	.693	.994	1.172	1.138
PCSD605	1.030	1.230	1.121	1.130	.734	1.281	1.258	1.367
PCSD608	.959	1.467	1.363	1.015	.801	1.369	1.256	1.077
PCSD609	1.072	1.504	1.551	1.216	.847	1.527	1.484	1.404
PCSD610	.919	.904	1.085	1.107	.882	1.186	.990	.754
PCSD611	1.127	1.099	1.276	1.131	.900	1.337	1.232	1.152
PCSD613	1.305	1.473	1.482	1.342	.889	1.545	1.448	1.363

	PCSD 509	PCSD 511	PCSD 513	PCSD 603	PCSD 605	PCSD 608	PCSD 609	PCSD 610
PCSD509	2.358							
PCSD511	1.543	2.531						
PCSD513	1.652	1.234	2.080					
PCSD603	.995	.958	.779	2.067				
PCSD605	1.242	1.456	1.141	1.036	2.968			
PCSD608	1.285	1.415	1.049	.853	1.292	2.412		
PCSD609	1.436	1.367	1.348	1.278	1.314	1.351	2.296	
PCSD610	1.186	1.073	1.038	.824	1.320	1.434	1.127	3.075
PCSD611	1.411	1.263	1.161	.844	1.539	1.346	1.224	1.780
PCSD613	1.515	1.473	1.340	.990	1.058	1.045	1.293	.866

	PCSD 611	PCSD 613
PCSD611	2.757	
PCSD613	1.210	2.301

Note. Means and standard deviations were calculated using n, and covariances were calculated using $n - 1$.

Covariance Matrix 2: Age Identity Measurement Model (N_1 = 195)

	Mean	Std. Deviation	I feel	I look	I do	My interests
I feel ...	57.64	14.05	197.499			
I look ...	60.92	9.69	82.086	93.989		
I do ...	57.33	13.40	120.481	82.371	179.450	
My interests ...	54.56	12.69	97.936	67.415	109.141	161.020

Note. Means and standard deviations were calculated using *n*, and covariances were calculated using $n - 1$.

Covariance Matrix 3: LSIZ Measurement Model (N_1 = 195)

	Mean	Std. Deviation	LS1	LS2	LS3*	LS4*	LS5*	LS6	LS7	LS8	LS9	LS10	LS11*	LS12*	LS13
LS1	3.51	1.27	1.612												
LS2	3.16	1.25	.976	1.557											
LS3*	4.09	1.28	.502	.491	1.626										
LS4*	4.03	1.21	.520	.438	.631	1.453									
LS5*	4.12	1.23	.636	.517	.443	.594	1.507								
LS6	3.91	1.15	.387	.443	.369	.446	.305	1.311							
LS7	3.13	1.47	.402	.397	.530	.504	.340	.365	2.149						
LS8	3.44	1.23	.752	.848	.462	.342	.335	.463	.688	1.515					
LS9	3.95	1.03	.487	.533	.169	.197	.335	.470	.194	.510	1.055				
LS10	3.75	1.14	.492	.642	.094	.240	.266	.457	.112	.494	.751	1.300			
LS11*	3.83	1.20	.501	.440	.397	.485	.320	.376	.136	.381	.471	.601	1.444		
LS12*	3.29	1.34	.266	.346	.495	.264	.409	.212	.310	.199	.168	.298	.360	1.793	
LS13	3.43	1.26	.319	.463	.102	.074	-.004	.308	.088	.288	.396	.580	.358	.140	1.349

Note. Means and standard deviations were calculated using *n*, and covariances were calculated using *n* – *1*.

* Items were reverse-coded.

Covariance Matrix 4: SEM Model (N_1 = 195)

	Mean	SD	Age	Sex	PCSD 108	PCSD 111	PCSD 207	PCSD 208	PCSD 212	PCSD 302	PCSD 313	PCSD 402	PCSD 403
Age	76.27	6.88	47.320										
Sex	1.61	.49	.543	.239									
PCSD108	3.68	1.65	2.932	.193	2.715								
PCSD111	3.59	1.62	3.475	.156	1.580	2.613							
PCSD207	2.77	1.55	1.756	.061	1.556	1.439	2.392						
PCSD208	3.49	1.72	3.105	.136	1.804	1.608	1.627	2.942					
PCSD212	3.08	1.56	2.613	.071	1.721	1.557	1.847	1.802	2.525				
PCSD302	3.12	1.57	2.984	.072	1.564	1.187	1.568	1.638	1.651	2.465			
PCSD313	2.54	1.60	1.938	.092	1.438	1.219	1.400	1.517	1.556	1.513	2.569		
PCSD402	3.87	1.59	3.179	.228	1.886	1.479	1.445	1.759	1.634	1.572	1.255	2.535	
PCSD403	4.32	1.47	3.357	.255	1.739	1.266	1.207	1.644	1.336	1.405	1.073	1.758	2.168
PCSD406	3.38	1.62	3.775	.159	1.752	1.417	1.468	1.761	1.533	1.465	1.341	1.848	1.547
PCSD409	3.94	1.64	3.690	.215	1.605	1.395	1.358	1.822	1.479	1.342	1.252	1.859	1.709
PCSD506	4.25	1.56	3.821	.267	1.647	1.203	1.138	1.708	1.466	1.424	1.326	1.913	1.817
PCSD507	4.19	1.51	2.949	.203	1.603	1.289	1.223	1.483	1.393	1.282	1.196	1.865	1.598
PCSD511	3.66	1.58	2.855	.278	1.492	1.154	1.304	1.407	1.207	1.206	1.140	1.755	1.441
PCSD605	3.78	1.73	2.743	.395	1.306	1.397	.920	1.189	.867	.948	.905	1.410	1.230
PCSD608	3.09	1.58	2.934	.335	1.530	1.321	1.284	1.248	1.266	1.149	1.141	1.466	1.351
PCSD609	4.08	1.51	2.138	.202	1.723	1.389	1.240	1.418	1.421	1.171	1.157	1.629	1.453
PCSD610	3.67	1.73	1.701	.475	1.131	.928	.725	.961	.917	.616	.817	1.081	1.081
PCSD611	3.28	1.70	1.524	.387	1.312	1.164	1.047	1.456	1.123	.957	1.268	1.407	1.281
I Feel	57.64	14.05	51.096	.365	2.378	2.648	.960	4.260	2.296	2.857	1.741	3.304	3.704
I Look	60.92	9.69	37.485	.155	1.743	1.665	1.292	1.244	1.011	1.695	-.397	.944	2.123
I Do	57.33	13.40	47.467	.296	.423	.409	.581	2.505	1.082	2.739	.206	2.027	2.309
My Interest	54.56	12.69	38.107	.242	1.328	.570	.932	1.659	2.070	3.634	2.324	2.186	2.642
Health	7.67	1.83	-1.617	-.062	.207	.435	-.093	.126	-.079	-.070	-.005	.025	.305
SA	97.37	12.63	-21.858	-.080	-3.667	-1.368	-2.900	-2.871	-3.405	-3.771	-1.172	-4.570	-4.060
LS1	3.51	1.27	-.997	-.038	.155	.196	.234	.104	.177	.234	.210	.148	.180
LS2	3.16	1.25	-1.280	-.128	.170	.085	.062	-.043	.096	.079	.063	.010	.000
LS8	3.44	1.23	-1.127	-.030	.337	.342	.279	.042	.178	.051	.171	.319	.245
LS9	3.95	1.03	.791	-.018	.212	.208	.242	.116	.303	.139	.195	.149	.257

	PCSD 406	PCSD 409	PCSD 506	PCSD 507	PCSD 511	PCSD 605	PCSD 608	PCSD 609	PCSD 610	PCSD 611	I Feel	I Look	I Do
PCSD406	2.618												
PCSD409	1.784	2.693											
PCSD506	1.659	1.777	2.424										
PCSD507	1.639	1.799	1.700	2.289									
PCSD511	1.569	1.568	1.673	1.586	2.484								
PCSD605	1.319	1.230	1.265	1.221	1.457	3.005							
PCSD608	1.568	1.546	1.395	1.302	1.418	1.438	2.507						
PCSD609	1.417	1.525	1.500	1.526	1.327	1.348	1.389	2.272					
PCSD610	.955	.889	1.174	.960	.964	1.259	1.438	1.053	3.005				
PCSD111	1.224	1.243	1.504	1.256	1.405	1.570	1.546	1.297	1.736	2.882			
I Feel	4.663	3.371	4.656	1.842	3.773	1.345	1.404	1.586	.459	-.117	197.499		
I Look	2.174	2.166	1.833	.649	1.298	.715	1.718	.697	1.748	-.102	82.086	93.989	
I Do	2.667	2.375	2.928	.973	1.296	1.381	2.258	-.141	2.162	-.546	120.481	82.371	179.450
My Interest	2.537	1.496	3.098	.934	.906	.163	.298	1.118	-.144	-1.064	97.936	67.415	109.141
Health	-.187	-.024	-.032	.063	.011	.170	-.237	.293	-.325	.069	-7.341	-2.800	-7.391
SA	-5.720	-4.896	-4.794	-4.504	-5.180	-2.316	-3.710	-2.902	-1.294	-1.099	-26.329	-12.151	-24.460
LS1	.110	.152	.029	.104	.031	.120	.046	.108	-.178	.199	-3.332	-1.811	-4.670
LS2	-.035	-.058	-.050	-.082	-.177	-.079	-.035	.126	-.355	-.065	-3.541	-1.745	-3.852
LS8	.040	.221	.083	.278	.264	.161	.274	.253	.036	.214	-2.368	-1.281	-4.038
LS9	.054	.157	.109	.133	.025	.000	.174	.148	-.087	.152	-1.501	.301	-1.515

	My Interest	Health	SA	LS1	LS2	LS8	LS9
My Interest	161.020						
Health	-1.555	3.358					
SA	-24.810	3.853	159.617				
LS1	-1.711	.613	1.299	1.612			
LS2	-1.245	.718	2.791	.976	1.557		
LS8	-1.948	.666	2.965	.752	.848	1.515	
LS9	-.098	.270	1.796	.487	.533	.510	1.055

Note. Means and standard deviations were calculated using n, and covariances were calculated using $n - 1$.

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